Moderating factors that influence the transition between suicidal ideation and behaviour amongst young people with a first episode of psychosis

Volume I: Research Component

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OVERVIEW

This thesis is submitted to the University of Birmingham in partial fulfilment of the requirements of the degree of Doctor of Clinical Psychology at the School of Psychology, University of Birmingham. It contains two volumes. The first volume is the research component and includes a literature review, an empirical study and public domain briefing paper. The second volume represents the clinical component, and includes five Clinical Practice Reports (CPR) that relate to anonymised work completed on the assessed clinical placements over the three years of the course.

Volume I: Research Component

Suicide is a global leading cause of death with approximately one million people per year ending their life by suicide. Rates of suicide amongst young people with a first episode of psychosis are significantly higher than those of the general population. Several theoretical models of suicide have emerged over the last 30 years to understand and explain suicidality. Generally these models focus on aspects of suicidality common to a range of disorders and can be applied universally. The most recent model is the Integrated Motivational Volitional (IMV) model of suicidal behaviour which was developed based on major components from previous models. Moderating factors play a crucial role within models of suicidality as they serve to increase or decrease the risk of suicide outcomes (O'Connor, 2011). A literature review and research study were conducted to identify and explore the factors that are important for understanding why people think about, attempt and are successful at killing themselves in a psychosis population.

The aim of the literature review was to identify the psychosocial factors that reduce the risk or protect against suicidality specific to people experiencing psychosis. The paper

reviews 26 articles published between 1984 and 2014 and uses the Integrated Motivational Volitional model of suicidal behaviour as a framework to structure the review. Positive self-appraisals, social support, daily activities, coping, negative symptoms of psychosis, and low IQ were found to protect against suicide amongst people with psychosis. Positive self-appraisals was the only moderating factor that provided partial support for the Integrated Motivational Volitional model. The review highlighted that additional factors, unique to people with psychosis, may need to be incorporated into the Integrated Motivational Volitional model. Clarification of the direction and strength of protective and moderating factors may further enable researchers and clinicians to improve prevention strategies and interventions of suicide risk. It is anticipated that this paper will be submitted to the *Psychological Review*.

The empirical paper aimed to investigate the Interpersonal-Psychological Theory (IPT) of Suicide's hypotheses in the context of psychosis. This theory has also been included within part of the Integrated Motivational Volitional model. The Interpersonal-Psychological Theory is currently the only theory which explains the distinction between why some people think about, attempt and are successful at killing themselves. The interpersonal-psychological theory of suicidal behaviour suggests that an individual who does not feel they belong and believes they are a burden, combined with the capability to attempt suicide is more likely to make a suicide attempt. Young people with a first episode of psychosis who considered suicide (n=15), had attempted suicide (n=15) or control (n=15) were compared on self-report measures of suicidal desire and capability for suicide. Results suggested that all participants perceived themselves to be a burden, did not feel they belonged and had the capability for suicide. However, this study was unable to distinguish between those who just think about suicide and those who attempt in a psychosis population. The paper discusses how the

concepts of the Interpersonal-Psychological Theory appear to mirror the experience of psychosis, regardless of suicide history. It is anticipated that this paper will be submitted to the *British Journal of Clinical Psychology* .

The third paper is a Public Domain Briefing Paper, summarising the main findings of both the literature review and empirical study for dissemination to a wider audience.

Volume II: Clinical Component

Volume II of the thesis represents the clinical component. This work was completed during an adult community mental health placement, a physical health older adult placement, a specialist Early Intervention Service placement and a learning disability placement. The reports describe a range of assessments, formulations, interventions and evaluations that were completed from cognitive behavioural, psychodynamic, compassion-focused and systemic perspectives. Chapter 1 describes an assessment and formulation of a 44-year old female who was experiencing post-traumatic stress disorder. It was discussed from cognitive-behavioural and psychodynamic perspectives. Chapter 2 describes an evaluation of a community mental health team to explore whether they adhered to step 4 of a stepped-care approach in national guidance for the management and treatment of depression in adults. Chapter 3 describes a single-case experimental design, which considers the case of a 77 year old lady in remission from breast cancer presenting with shame based anxiety. Chapter 4 describes a case study of the assessment and formulation of an 18-year old male who was experiencing persecutory delusions. Chapter 5 provides a summary of a presentation which considers the case of a 36 year old male with a Learning Disability, presenting with a fear of dogs, understood through a systemic framework.

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ABBREVIATIONS

ACSS	Acquired Capability for Suicide Scale
ANCOVA	analysis of covariance
ANOVA	analysis of variance
BDI	Beck Depression Inventory
BFT	Behavioural Family Therapy
CBT	Cognitive Behavioural Therapy
CMHT	Community Mental Health Team
C-SSRS	Columbia-Suicide Severity Rating Scale
EIS	Early Intervention Service
FEP	First Episode of Psychosis
IMV	Integrated Motivational-Volitional model of Suicidal Behaviour
INQ	Interpersonal Needs Questionnaire
IPT	Interpersonal-Psychological Theory of Suicide
IQ	Intelligence Quotient
M	Mean
MAP	Maudsley Addiction Profile
MM	Motivational Moderators
NHS	National Health Service

NICE	National Institute of Health and Clinical Excellence
PPES	Painful and Provocative Events Scale
PTSD	Post-Traumatic Stress Disorder
RCT	Randomized Control trial
RLI-RF	Reasons for Living Inventory - Responsibility to Family subscale
SD	Standard deviation
SPSS	Statistical Package for Social Sciences
TSM	Threat to Self-Moderators
UCLA	Revised UCLA Loneliness Scale
VM	Volitional Moderators

CHAPTER 1: LITERATURE REVIEW

Protective and Moderating Psychosocial Factors that Buffer against Suicidality in Psychosis

ABSTRACT

Lifetime suicide rates amongst individuals with psychosis are significantly higher than those of the general population. Psychological theory demonstrates that protective and moderating factors that buffer risk against suicidality are important for understanding why people think about, attempt and are successful at killing themselves. An Integrated Motivational Volitional model guides current thinking of the process of suicidality and refers to three types of moderating factors (threat-to-self, motivational and volitional moderators). This model was used as a framework to identify protective and moderating factors against suicidality in the context of psychosis. The review found twenty-six articles published between 1984 and 2014. Positive self-appraisals, social support, daily activities, coping, negative symptoms of psychosis, and low IQ were found to protect against suicide amongst people with psychosis. The majority of these factors showed a linear association with suicidality. Positive self-appraisals was the only moderating factor that provided partial support for the Integrated Motivational Volitional model. The review highlighted that additional factors, unique to people with psychosis, may need to be incorporated into the Integrated Motivational Volitional model. Clarification of the direction and strength of protective and moderating factors may further enable researchers and clinicians to improve prevention strategies and interventions of suicide risk.

Keywords: psychosis, suicide, integrated motivational volitional model, moderator, protective factor

INTRODUCTION

Suicide Among Young People with Psychosis: Current Scope of the Problem

Suicide is a global leading cause of death (Hawton & van Heeringen, 2009) with approximately one million people per year ending their life by suicide (World Health Organisation, 2011). People with psychosis are considered to be at a higher risk than the general population for suicide (National Institute of Health and Clinical Excellence, NICE, 2013). Lifetime rates of suicide attempts amongst people with a diagnosis of psychosis has been reported as 5% and is the prime cause of mortality in this population (McLean, Maxwell, Platt, Harris, & Jepson, 2008; Hor & Taylor, 2010; O'Connor, Platt, & Gordon, 2011). It is particularly high during the first few years of a psychotic illness, known as the 'critical period' (Westermeyer, Harrow, & Marengo, 1991), and is more likely to occur during a psychotic episode (Hu et al., 1991; O'Connor, et al., 2011). Prior to their first contact with services, many will have previously attempted suicide and five years later, one in every 100 commit suicide (Heila & Lonnqvist, 2003). Social exclusion, a sense of shame, stigma, problems developing new relationships, and fear, are just some of the difficulties that people with a psychotic illness endure in these first few years (Birchwood et al., 2007; NICE, 2009).

Risk Factors for Suicide among People with Psychosis

Many risk factors have been identified within the literature for suicide amongst people with psychosis. Some of these risk factors have been found to be in common with the general population (i.e. previous suicide attempts and social isolation), others have been found to be specific to those with psychosis (i.e. poor adherence with treatment, fear of mental disintegration, insight into illness and entrapment; Hawton, Sutton, Haw, Sinclair, & Deeks, 2005; O'Connor et al., 2011). Most of these risk factors identify large groups of people and several of them cannot be altered (e.g. having a mental health problem; Cole-King & Lepping,

2010; Hawton & van Herringen, 2009). However, people with psychosis are not a homogenous '*at risk'* group and not all go on to attempt suicide. This suggests that other factors may be involved that moderate or reduce the impact of a risk factor or factors upon an eventual outcome of suicide (Johnson, Wood, Gooding, Taylor, & Tarrier, 2011).

General Protective and Resilience factors

Factors that reduce the risk of suicide are known as protective factors (Berman, Jobes & Silverman, 2006). They are sometimes considered to be the reverse or absence of a risk factor. However, they are much more modifiable and can facilitate the development of interventions of suicidality (Gutierrez & Osman, 2008; Montross, Ziskook & Kasckow, 2005). More recently, research has focused on the area of resilience as a protective construct, defined as a psychological moderating factor that can reduce the strength of the relationship between a risk factor and suicidality (Johnson, Gooding, Wood, Taylor, Pratt & Tarrier, 2010; Johnson, Wood, Gooding, Taylor & Tarrier, 2011). Like protective factors, high levels of resilience can also reduce the likelihood of suicidality (Johnson, et al. 2010). However, where protective factors can be identified as being on the same but opposite dimension of risk and demonstrated through the use of bivariate associations, resilience is on a separate dimension and is determined using statistical tests of moderation to measure whether a third variable can alter the strength between two other variables (Johnson et al., 2010). To date, only Johnson et al. (2011) have reviewed these moderating, resilience factors of suicidality across a wide range of populations. They identified one study that explored resiliency within a population specific to schizophrenia, where the risk factor, insight showed no interaction between premorbid adjustment and suicide attempts (Restifo, Harkavy-Friedman, & Shrout, 2009). In addition to Johnson et al.'s (2011) research, moderating factors have also featured as a

prominent concept within theoretical models that help to explain suicidality (O'Connor et al. 2011).

Theoretical Models of Suicidality in Psychosis

Several theoretical models of suicide have emerged over the last 30 years, many of which do not distinguish between suicidal ideation and behaviour (O'Connor et al., 2011). Most of these models have not been empirically tested and tend to explain suicide in general as opposed to focusing on specific clinical populations such as those who experience psychosis (Bolton, Gooding, Kapur, Barrowclough & Tarrier, 2007; O'Connor et al., 2011; Johnson, Gooding & Tarrier, 2008).

Integrated Motivational Volitional (IMV) Model. The most recent model is a three phase Integrated Motivational- Volitional (IMV) model of suicidal behaviour (see Figure 1). O'Connor (2011) developed the theoretically driven, transitional IMV model by integrating major constructs from predominant models such as the diathesis-stress hypothesis (Schotte & Clum, 1987) the Cry of Pain model (Williams, 1997), the Theory of Planned Behaviour (Ajzen, 1991) and the Interpersonal-psychological theory (Joiner, 2005). O'Connor (2011) highlights how moderating factors play a crucial role within suicidality as they serve to increase or decrease the risk of suicidal outcomes.

The IMV suggests that a combination of background factors including 'diathesis' (e.g. genetic or biological vulnerabilities), the environment (e.g. deprivation) and triggering negative life events (e.g. bullying, sexual abuse) can provide a broad context for suicide (the 'pre-motivational phase') and can activate defeating or humiliating appraisals and feelings of entrapment (the 'motivational phase'). For example, an individual's experience of paranoia

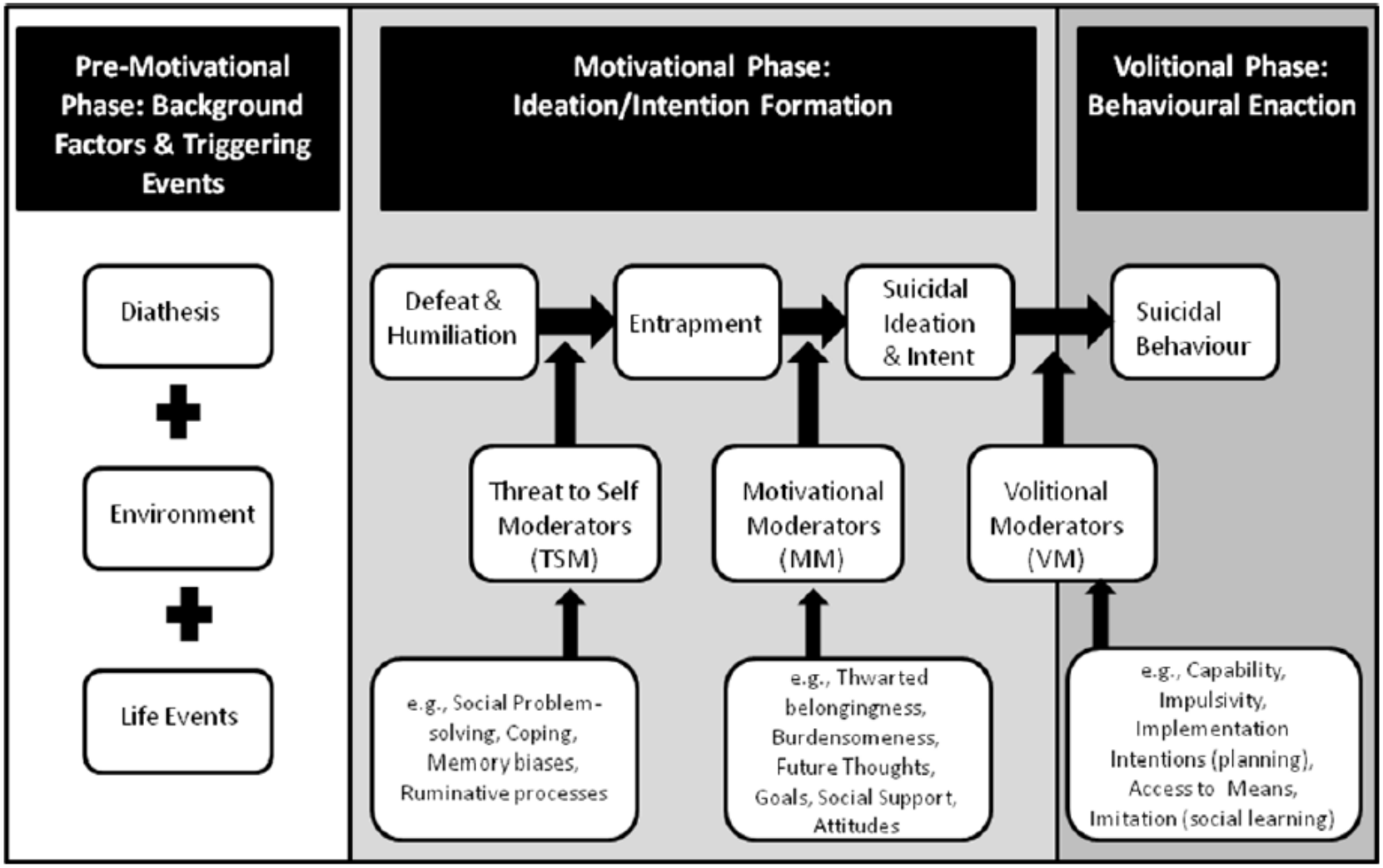

Figure 1: O'Connor's (2011) Integrated Motivational-Volitional model of suicidal behaviour (IMV)

might trigger feelings of defeat and entrapment because of an interpersonal struggle which can be translated into suicidal ideation (Freeman et al., 2005). Entrapment has been identified as a key factor of suicidality amongst people with psychosis (Taylor et al. 2011) and the IMV places it in the centre of a psychological framework (O'Connor, 2011). The third phase of the model, termed the 'behavioural enaction' phase, refers to the final transition between suicidal ideation and behaviour (O'Connor, 2011). The transition between the pathways within the model (i.e. defeat to entrapment, entrapment to suicidal ideation and suicidal ideation to behaviour) are influenced by moderators which can be categorized into three different types (O'Connor, 2011). Firstly the threat to self-moderators which are any factors that influence the pathway between defeat and entrapment (e.g. problem-solving, coping, memory biases and rumination). Secondly, motivational moderators (e.g. social support) influence the pathway between suicidal ideation and intent. Finally, volitional moderators which moderate the pathway between suicidal ideation and suicidal behaviour (e.g. impulsivity) (O'Connor, 2011). O'Connor et al. (2011) gives examples of the differing moderators under each category (see Figure 1) and suggests there may be many others that are also important (O'Connor et al., 2011).

For the purpose of this literature review the IMV was chosen because it combines a number of key factors from predominant theories (i.e. Ajzen, 1991; Joiner, 2005; Schotte & Clum, 1987; Williams, 1997). Unlike other models, it also illustrates the process of suicidality and the distinction between those who will develop suicidal thoughts (or not) and those who will act on them and when (O'Connor & Nock, 2014). Although the IMV model is a new theoretical model and not been tested empirically in its entirety, it expands on the evidence for the individual components derived from other models (O'Connor & Nock, 2014). For example O'Connor uses the Interpersonal Theory of Suicide to explain that acquired

capability is one of several factors within the IMV that increases the likelihood of a suicide attempt and is supported within the literature amongst people with depression (Smith, Cukrowicz, Poindexter, Hobson, & Cohen, 2010) people in the military (Bryan, Cukrowicz, West, & Morrow, 2010) and an undergraduate sample (Van Orden, Witte, Gordon, Bender, & Joiner, 2008). Generally models of suicidality focus on aspects of suicidality common to a range of disorders and can be applied universally (i.e. a 'one size fits all' approach) (Bolton, Gooding, Kapur, Barrowclough, & Tarrier, 2007). However, there may be specific moderating factors which influence the pathways of the IMV model. The IMV has not been explored in the context of psychosis. It would therefore be helpful to identify the empirical research on moderating factors specific to people with psychosis to inform the IMV model and to have a better understanding of this area. Given that the IMV model guides current thinking of the process of suicidality and refers to several types of moderating factors, this model will be used in the review to organize the conceptualization of any moderating factors that emerge from the literature.

OBJECTIVES

Given the high suicide attempt rates that have been documented in a psychosis population, a review of the literature on the moderating and protective factors appears to be pertinent. The objective of this review is to identify any protective or moderating factors that reduce the risk of suicidality amongst young people with psychosis, and review what is currently known about them. The IMV model will be used as a framework to guide the focus and to identify any gaps within the literature.

SEARCH STRATEGY

For the purpose of this review, four electronic databases (Embase, Medline, PsycINFO and Web of Science) were searched to identify relevant papers published before May 2014. Reference lists of included articles and an examination of the titles of the first 1000 hits in Google Scholar using the terms used in the electronic database search were also conducted to obtain any additional articles that had been missed. Literature was sought that focused on any protective or moderating factors that buffered against suicidality amongst young people (15-25 years) with psychosis.

Definitions of Search Terms

'Psychosis' refers to a group of psychotic disorders that includes schizophrenia, schizoaffective disorder, schizophreniform disorder and delusional disorder (NICE, 2013, 2014). The first time someone experiences psychotic symptoms (e.g. hallucinations, delusions, catatonia, thought disorder), or an episode, is defined as First Episode Psychosis (FEP) (Breitborde, Srihari, & Woods, 2009). Researchers in the area of psychosis tend to include a range of psychotic disorders within their research sample because of the instability of a diagnosis in the initial stage of psychotic illness (Haahr et al., 2008). In the review 'psychosis' will be used to refer to populations which included individuals with a variety of these disorders.

The term 'suicide' in this review relates to any aspect along the continuum of suicidality, such as suicidal ideation to suicide attempts and death by suicide (Nock et al., 2013). Self-harming or destructive behaviours with no suicidal intent or assisted suicide were excluded.

A 'moderating factor' referred to any variable that interacted in a statistical test of moderation between a risk factor and suicidal outcome (Johnson et al., 2011). Johnson et al. (2011) term this 'resiliency'. However, since the IMV model was used as a framework to guide the review, the term 'moderating factor' was used in the review to maintain consistency with the IMV terms. Johnson et al. (2011) highlight that interaction effects have not always been employed in this area of research. Therefore any factors that protected against suicidality (e.g. a factor demonstrated to be negatively associated with suicidal behaviour) were also identified and labelled a 'protective factor'. Keywords for these terms were based on the examples of moderating factors from the IMV model and moderating (or 'resilience') factors from Johnson et al. (2011) research. This was to ensure greater flexibility and a wide coverage of the literature which may not have been otherwise captured.

The term 'young person' referred to the stage in life between childhood and adulthood aged 15 to 25 years old. This age banding was based on a number of definitions including an age bracket of 15 to 24 years old defined by the World Health Organization (WHO, 1989), 16 to 25 years old as defined by the Mental Health Foundation (Fraser & Blishen, 2007) and 15 to 25 defined by Young People in Focus (Devitt, Knighton, & Lowe, 2009). Consequently, the review will take account of these definitions and use a broad range between 15 - 25 years old.

Keywords

Table 1 outlines the keywords employed in the search strategy. These were developed based on the main constructs from the title of this review along with the key terms defined above. For a more comprehensive breakdown of the search see Appendix 1.

Table 1: Keywords searched

Construct	Keywords
Psychosis	"first episode psychosis" OR psychosis Or psychoses OR psychotic OR schizophreni* OR "schizotypal disorder*" OR "delusional disorder*" OR "schizoaffective disorder*" OR "early psychosis" OR "recent onset schizophrenia" OR "recent onset psychosis" OR "first episode schizophrenia" OR "early schizophrenia"
Suicide	suicid* OR parasuicid*
Protective/ Moderating Factor	protect* OR buffer* OR moderat* OR modulat* OR mediat* OR resilien* OR recover* OR prevent* OR attenuat* OR interact* OR Terms based on O'Connor (2011) and Johnson et al. (2011) research: ("social problem solv*" or "problem solv*"or coping or cope* or "memory bias*" or "cognitive bias" OR "cognitive processes" or ruminat* or belong* or burden* or "future thought*" or "social support" or attitude* or capability or capable or impuls* or implementation or intention* or "access to mean*" or imitation or "social learn*" or "attribution*" or adaptability or personality or "emotional intelligen*" or "cognitive process bias*" or "self esteem" or agency or confiden* or "reason* for living" or "life evaluation" or "life satisfaction" or "attachment behav*" or "emotional control" or "faith" OR "family relations" OR friendship OR hope OR hopelessness or optimism OR "parent child relations" OR religion OR "religious beliefs" or "self efficacy" OR "significant others" OR "social interaction" OR "social networks" OR "social perception" OR "social support" OR "spirituality" OR "support groups")
Young People	Initially a limit on the age range was employed in the search strategy to keep the search as broad as possible. The following terms were added at the final stage to refine the strategy: child* or teen* or youth* or student* or "young adult" or "young person" or "young people" or juvenile* or adolescen* or "early adulthood" or "young individual"

*Truncated words are denoted with an asterix to allow for the inclusion of variations in the ending of the word (e.g. plurals, variant spelling and multiple suffixes)

Inclusion and Exclusion Criteria

The results of the search were screened for eligibility. The review was restricted to peer reviewed empirical studies written in English and human subjects only. Articles reporting protective or moderating factors that buffered against suicidality were included.

All letters and foreign language studies were excluded. Studies which focused on experimental studies of interventions, pharmacological factors as protective factors, self-

harming or destructive behaviours with no suicidal intent or assisted suicide were excluded. This was because the focus of the literature was to explore the psychosocial, interpersonal factors. Unpublished dissertations and book chapters were also excluded. Studies that focused on risk factors were excluded.

Figure 2 demonstrates the overall process of inclusion and exclusion of studies. The examination of literature resulted in an initial pool of 1138 articles. A total of 345 were removed because of duplication between databases. After limiting the results to English language, peer reviewed journals and humans, this refined the search to a total of 367 articles.

Closer examination of the remaining 367 articles revealed 23 empirical studies and 3 reviews, which fulfilled the inclusion criteria, and are the focus of this review. A list of the final selection of studies is in Appendix 2.

Critical appraisal frameworks were employed when reviewing each article to identify the quality. Caldwell, Henshaw and Taylor (2005) seemed the most relevant to use in this review as it focuses on the quality for both qualitative and quantitative research. Based on the key criteria, two frameworks were developed for qualitative and quantitative studies. To facilitate this process, other appraisal tools were referred to in order to operationalize each criterion in Caldwell et al.'s (2005) framework (Critical Appraisal Skill Programme, 2011; Sale & Brazil, 2004). This ensured a degree of specificity and consistency when rating the articles against the criteria. For every criterion, a rating was recorded when evaluating each article against the respective framework (Appendix 3 & 4). This framework provided a guide on the overall quality of the studies and demonstrated that many of the studies fulfilled the majority of the quality criteria. However, upon closer examination of the studies, there were clear discrepancies in quality between them. For example, one study based their results on

secondary data and another study based their findings on insight on one item from a standardized measure. This indicates limitations around generalizability, validity and reliability. These issues were not considered within the framework, hence this highlights the frameworks limited discrepancy and ability to go into depth for this review. All of the papers were included within the findings with the aim of producing a thorough review. Nevertheless, the limitation on discrepancy should be taken into account when considering the credibility of the current review.

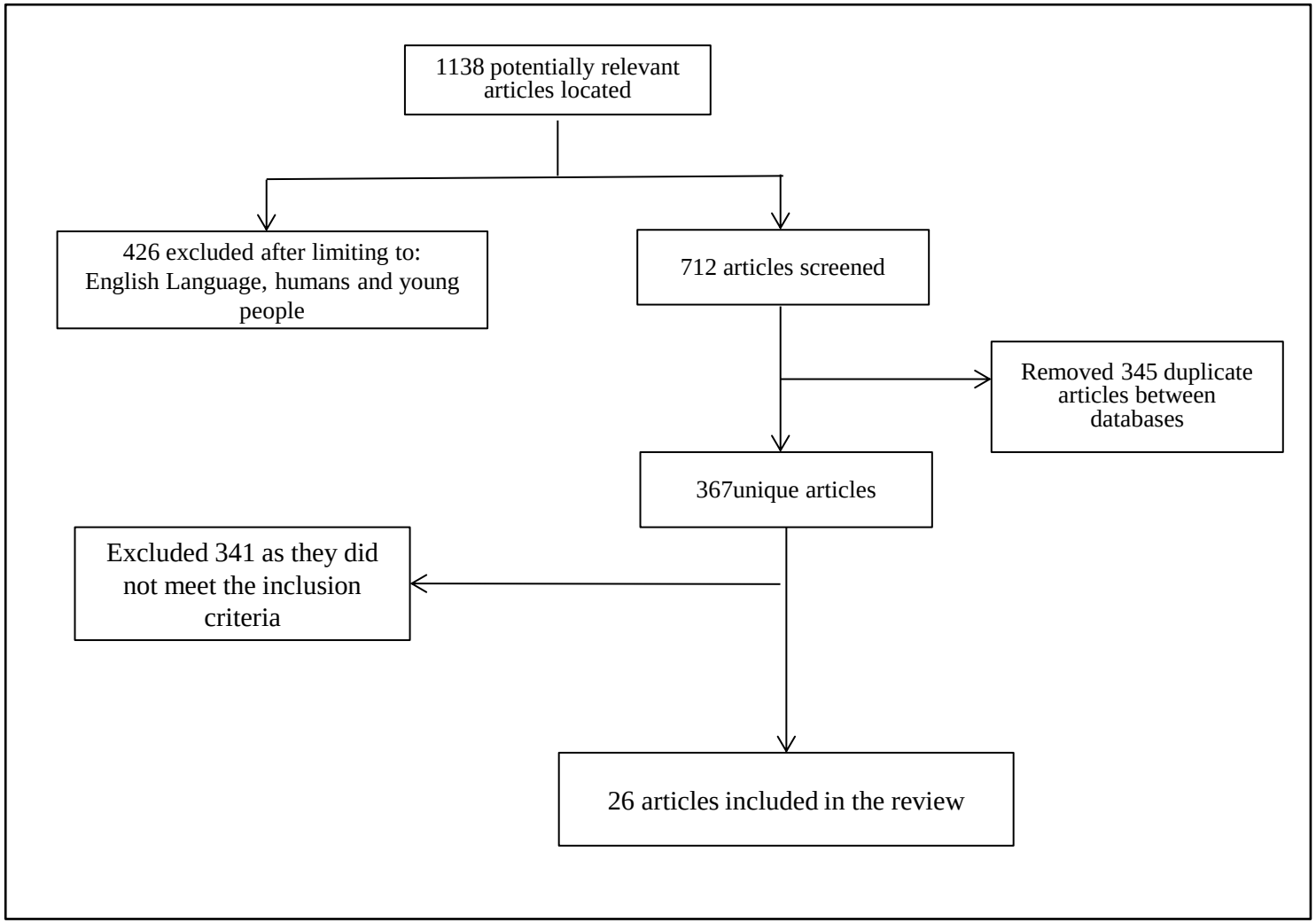

Figure 2: Included/Excluded studies

PROTECTIVE AND MODERATING FACTORS THAT BUFFER SUICIDE RISK

Overall, twenty-three empirical studies and three reviews were identified as relevant for this review. Information regarding the country, methodology, suicidality measure, protective/moderating factor and results are provided to highlight their findings (see Table 2). Before outlining the protective and moderating factors involved in decreasing suicide risk that emerged from the literature, it would be useful at this stage to refer back to the IMV model (described in the introduction), as this has been used as a framework to guide this review (see Figure 1). The studies were discussed in light of the IMV's overarching moderating terms and begins with a discussion on the studies relating to the Threat to Self-Moderators (TSM). This is followed by those studies relating to Motivational Moderators (MM), and thirdly, the Volitional Moderators (VM). In the IMV model's present state, there are no moderating pathways between the pre-motivational phase (i.e. life events, background factors) and the motivational phase. Subsequently, there is a final discussion of the factors that emerged from the data that were considered more appropriate to the pre-motivational phase because they related to background factors.

Table 2: Summary of included articles

Study & Country	Type of Study	Participants	Methodology	Protective Factor & associated IMV moderator	Relevant Findings
Acosta, Aguilar, Cejas, Gracia (2013) Country: Tenerife, Spain	Prospective cohort study	N = 60. Outpatients. Schizophrenia (ICD-9). Total sample: Mean age: 31.1 years (SD=8.1); 75% male. 58.3% attempted suicide. Duration of illness 9.1years (6.9)	**Design**: Prospective, longitudinal (1yr follow up). However, data retrieved from the Personal Beliefs about Illness Questionnaire (PBIQ) were only collected at baseline hence a cross sectional design for this data. **Sampling**: Opportunity sampling **Analysis**: Multiple regression **Measure of Suicidality:** Suicide attempts (suicide attempter status)	Beliefs about illness **IMV**: Threat to self moderator	• Negative beliefs about illness were not different in patients with and without a history of previous suicidal attempts. • Negative beliefs about illness were associated with hopelessness and depressive symptoms. • None of the insight dimensions was associated with a higher risk of suicide over 1-y FU
Barrett et al. (2010) Country: Norway,	Cross-sectional study	N = 194 First Episode Psychosis, (DSM-IV; American Psychiatric Association, 2000). Outpatient	**Design**: Cross sectional **Sampling**: Subsample of the present sample was part of (Barrett, Sundet, Faerden, Nesvag, Agartz, Fosse, Mork, Steen, Andreassen, & Melle, 2010).	Beliefs about illness **IMV**: Threat to self moderator	• No significant association between insight, beliefs about illness and suicidality (p=.353) (Model chi-square=84.897, df = 5,

Study & Country	Type of Study	Participants	Methodology	Protective Factor & associated IMV moderator	Relevant Findings
Oslo		Sample: Mean age: 27 (8.6); 60.3% male; duration of illness (not reported)	**Analysis**: T-tests, Mann-Whitney U-tests, regression analysis **Measure of Suicidality:** Suicidality (Calgary Depression Scale for Schizophrenia CDSS)		p<.001).
Bourgeois, et al. (2004) Country: 11 countries (United States, Canada, France, Italy, the United Kingdom, the Czech Republic, Hungary, Croatia, South Africa, Argentina, and Chile)	Randomized Control Trial	N=980. Schizophrenia or schizoaffective disorder Sample: Mean age: 37.1 (10.3); 61.4% male; duration of illness (not reported)	**Design**: 2 year randomized, open-label, blinded-rater trial **Sampling**: Randomized **Analysis**: Cox proportional hazards regression models. **Measure of Suicidality:** Suicide attempt or hospitalization to prevent suicide in the 3 years before	**Insight** (Item 12 from Scale of Functioning) **IMV**: Threat to self moderator	• Greater awareness significantly predicted suicide events (hazards ration = 1.17). • When depression was included in the model awareness was nonsignificant as a predictor of suicide. • Although baseline awareness was a risk factor, increased insight during treatment was associated with a decrease in risk of suicide events at follow-up (hazards ration = 0.75).

Study & Country	Type of Study	Participants	Methodology	Protective Factor & associated IMV moderator	Relevant Findings
Breier and Astrachan (1984) Country: US	Case-control study	N = 101 (20 committed suicide, 81 control). Schizophrenia. Sample: Mean age; male; duration of illness (not reported)	**Design**: Retrospective, Case control, **Sampling**: Opportunity **Analysis**: T-tests, Chi-square tests. **Measure of Suicidality:** Committed Suicide	Religion **IMV**: Motivational moderator	• Those who committed suicide were more likely not to be associated with a religious group compared to those that were not suicidal.
De Hert, McKenzie & Peuskens (2001) Country: Belgium.	Case-control study	N=126 (63 committed suicide; 63 control group). Schizophrenia or schizoaffective disorder (DSM-III-R) Sample: Mean age; 28.5 (5.3); 77.8% male; duration of illness 9.2yr (1.8)	**Design**: Case control, longitudinal long term follow up (mean follow up =11.4years, SD 5.3)retrospective **Sampling**: opportunity **Analysis**: T-tests, Chi-square tests. **Measure of Suicidality:** Committed Suicide based on reports from family/mental health staff/GPs.	Social support and daily activities **IMV**: Motivational moderator	• The control group were more likely to have received community-based care, were four times more likely to have engaged in daily activities, and more likely to be symptom free compared to those who had committed suicide.
Fenton, McGlashan, Victor and Blyler (1997)	Case-control study	N = 295 Schizophrenia or Schizophrenia spectrum disorders(n=19 committed suicide, n=276 did not commit suicide)	**Design**: Used data from a previous case control, longitudinal long term follow up 19 years. **Sampling**: opportunity	Negative symptoms (PANSS)	• Negative symptoms are associated with a significantly lower long-term risk of

Study & Country	Type of Study	Participants	Methodology	Protective Factor & associated IMV moderator	Relevant Findings
Country: US		Sample: Mean age at follow up 47 years (12); (unknown)% male; duration of illness (not reported)	Analysis: ANOVA Measure of Suicidality: Committed Suicide	**IMV**: Pre-motivational phase	suicide among patients with schizophrenia.
Gooding, Sheehy & Tarrier (2013) Country: UK, Manchester	Mixed methods	N=36. Psychosis spectrum disorder, ICD-10 Outpatient. Sample: Mean age: 41.92 (12.97); 47.22% male; duration of illness (not reported)	**Design**: Presented with a vignette describing a protagonist with psychotic experiences and suicidal thoughts and open questions. **Sampling**: Opportunity sampling from community support groups (Mood Swings, Bipolar UK, CMHT) **Analysis**: Thematic analysis & Correspondence Analysis **Measure of Suicidality:** Suicidal behaviour Measure: Suicide Behaviours Questionnaire revised (SBQ-R)	Positive self-appraisals (i.e. changes in cognition, thinking positively) and Social support. **IMV**: Motivational moderators	• 44.4% perceived an attempt to change negatively biased cognitions or thinking positively would reduce suicidal behaviour. • Social support was identified as a strong counter to suicidal ideation but not as a counter to suicidal plans or acts.
Hawton, Sutton, Haw, Sinclair, and Deeks (2005)	Review	N = n/a. Schizophrenia Sample: aged 16 years over.	**Design:** Literature review of risk factors of suicide Sampling: N/A	Negative symptoms of psychosis **IMV**: Pre-	• No association between negative symptoms of psychosis and suicidality • The result of the

Study & Country	Type of Study	Participants	Methodology	Protective Factor & associated IMV moderator	Relevant Findings
Country: UK			**Analysis:** meta analysis Measure of Suicidality: Suicidality	motivational phase	meta-analysis did not show an association with suicide
Hu, Sun, Lee, Peng, Lin and Shen (1991) Country: Taiwan	Case-control study	N= 186 (n=42 committed suicide, n=84 sex and age-matched control, n=60 five year illness course non-suicidal control group) Sample: Mean age: (unknown); % male; duration of illness (unknown)	**Design:** Case control cohort. **Sampling**: Opportunity **Analysis:** T-tests, Chi-square tests. Measure of Suicidality: Committed suicide	Religion **IMV**: Motivational moderator	• No difference for the variable religion when suicidal patients were compared with gender- and age matched non-suicidal patients.

Study & Country	Type of Study	Participants	Methodology	Protective Factor & associated IMV moderator	Relevant Findings
Huguelet, et al. (2007) Country: Geneva.	Mixed methods	N=145. Outpatients, Schizophrenia or schizoaffective disorder (ICD-10) with and without suicidal attempts n=115 Inpatients without psychotic symptoms with suicidal attempts n=30 Sample: Mean age: 41 (10); 62.07% male; duration of illness 13.33yrs (10)	**Design**: Semi-structured interview, medical files, visual analogue scales. **Sampling**: Opportunity sampling **Analysis**: Content analysis **Measure of Suicidality:** Past suicide attempts.	Religion **IMV**: Motivational moderator	• Religiousness was not associated with the number of patients who attempted suicide. • 25% of all subjects acknowledged a protective role of religion, mostly through ethical condemnation of suicide and religious coping. • 1/10 patients reported an incentive role of religion, not only due to negatively connotated issues but also to the hope for something better after death. • There were no differences between groups (i.e. psychotic vs. non-psychotic patients).

Study & Country	Type of Study	Participants	Methodology	Protective Factor & associated IMV moderator	Relevant Findings
Jarbin & von Knorring (2004) County: Sweden.	Case-control study	N= 88. First Episode of psychotic disorder (DSM-IV) Sample: Mean age: 15.7 (1.5); 50% male; duration of illness (not reported)	**Design**: Case control, longitudinal long term follow up (mean follow up =10.6 years, SD 3.6) retrospective. Clinical records and measures (PANSS, LQOLP) **Sampling**: opportunity **Analysis**: Mann-Whitney rank test due to non-parametric. Logistic regression analysis. Measure of Suicidality: Past suicide attempts.	Religion **IMV**: Motivational moderator	• Satisfaction with religion was inversely associated to attempting suicide and remained after controlling for concurrent symptoms of anxiety and depression. • However, half of the participants had a diagnosis of a schizophrenia spectrum disorder, whereas the other half had psychotic symptoms. Upon closer exploration of the results from those who had a diagnosis, the association between religious beliefs and suicide attempts did not reach statistical significance

Study & Country	Type of Study	Participants	Methodology	Protective Factor & associated IMV moderator	Relevant Findings
Johnson, Gooding, Wood, Taylor, Pratt and Tarrier (2010) Country: UK, Manchester	Cross-sectional study	N = 77. Schizophrenia-spectrum disorders (ICD-10) Outpatients. Sample: Mean age: 42.3years (11.9); 71.43 % male; duration of illness 17.6years (11)	**Design**: Cross sectional **Sampling**: opportunity **Analysis**: Regression Analysis **Measure of Suicidality:** Suicidal ideation (Beck Scale for Suicidal Ideation)	Positive self-appraisals (Resilience Appraisals Scale) **IMV**: Motivational moderator	• Positive self-appraisals moderate the association between hopelessness and suicidal ideation.
Melle and Barrett (2012) Country: n/a	Review	N= n/a. First episode schizophrenia.	Review. Suicidal behaviour	Insight **IMV**: Threat to self moderator	• Inconsistent findings of insight
Mohr, Brandt, Borras, Gillieron, Huguelet (2006)	Qualitative	N=115 Outpatients, Schizophrenia or schizoaffective disorder (ICD-10) with and without suicidal attempts	**Design**: Semi-structured interview, medical files, visual analogue scales. Data from Huguelet et al. (2007) **Sampling**: Opportunity sampling **Analysis**: Content analysis	Religion **IMV**: Motivational moderator	• For some patients, religion instilled hope, purpose, and meaning in their lives (71%) • For others, it induced spiritual

Study & Country	Type of Study	Participants	Methodology	Protective Factor & associated IMV moderator	Relevant Findings
Country: Geneva.		Sample: Mean age: 39 (10); 70% male; duration of illness 15yrs (11).	**Measure of Suicidality:** Past suicide attempts.		despair (14%). • Religion may reduce (33%) or increase (10%) the risk of suicide attempts.
Montross, Ziskook, & Kasckow, (2005) Country: n/a	Review	N= n/a. Schizophrenia.	Review. Suicidal behaviour	Risk and Protective factors **IMV**: Motivational moderator	• Pharmacological treatments, community-based care, daily activities and freedom of symptoms were found to be protective factors against suicidality
Nordentoft, et al. (2002) Country: Copenhagen	RCT	N = 341. First-episode schizophrenia-spectrum disorder (ICD-10) Sample: Mean age: 27 (6.3); 60.1% male; duration of illness (not reported).	**Design**: Randomized control trial **Sampling**: Randomized **Analysis**: Logistic regression analyses **Measure of Suicidality:** Suicidal ideation and attempts (European parasuicide study interview schedule)	Social support (being a parent, being married, or having an intimate relationship) (Global Assessment of	• Demonstrated no protective effect of being a parent, being married, or having an intimate relationship. • Attempted suicide during the follow-up period occurred more frequently among patients who had an intimate relationship.

Study & Country	Type of Study	Participants	Methodology	Protective Factor & associated IMV moderator	Relevant Findings
				Functioning) **IMV**: Motivational moderator	
Oquendo, et al. (2005) Country: New York.	Cross-sectional study	N = 460. Schizophrenia (n=192), major depression (n=206), bipolar disorder (n=62) (DSM-III-R) in Latinos and non-Latinos. Sample: Mean age 33years (8.9), 50% male; duration of illness	**Design**: Cross Sectional **Sampling**: Purposive **Analysis**: Multivariate analyses. **Measure of Suicidality:** Suicidal acts measured by Columbia Suicide History Form and Scale suicidal ideation	Survival and coping skills, Moral objections to suicide, Responsibility to family (Reasons for living Reasons for Living Inventory, RFLI) **IMV**: Threat to self and Motivational moderators	• Survival and coping beliefs, responsibility to family, and moral objections to suicide identified in the RFLI may protect Latinos from acting on suicidal thoughts.
Restifo,	Cross-	N = 164. Schizophrenia,	**Design:** Cross-sectional	Insight	• No significant

Study & Country	Type of Study	Participants	Methodology	Protective Factor & associated IMV moderator	Relevant Findings
Harkavy-Friedman, and Shrout, (2009) Country: New York, U.S.	sectional study	schizoaffective (DSM-III-R). Suicide attempters (n=59), non-attempters (n=105) Sample: Mean age 37.2 years (11), 60% male; duration of illness 15.7 (10.47)	**Sampling**: Purposive **Analysis:** Logistic regression **Measure of Suicidality:** Suicide attempt status classified using a modified version of the Harkavy Asnis Suicide Survey	**IMV**: Threat to self moderator	interaction between insight, premorbid adjustment and suicidality.
Rosmarin, et al. (2013) Country: United States	Prospecti ve cohort study	N = 47. Present or past psychotic disorder. Sample: Mean age 29.72 years (10.62), 62.5% male; duration of illness (not reported)	**Design:** prospective **Sampling**: opportunity **Analysis**: ANOVA **Measure of Suicidality:** Suicidality (Suicidality Module from the Miniature international neuropsychiatric interview)	Religious coping (Brief RCOPE, Pargament et al 1998) **IMV**: Motivational moderator	• Negative religious coping (i.e. spiritual struggle) was associated with higher suicidality accounting for 46.24% of the variance in frequency of ideation and 37.2% of the variance in intensity of ideation. • Negative religious coping is strongly correlated with greater suicidal ideation as well as greater affective

Study & Country	Type of Study	Participants	Methodology	Protective Factor & associated IMV moderator	Relevant Findings
					symptoms among psychotic patients entering acute psychiatric treatment, but positive religious coping was not associated with better (or worse) functioning.
Schwartz-Stav, Apter and Zalsman (2006) Country: Israel	Cross-sectional study	N = 48. Schizophrenia (K-SADS) Inpatient. Sample: Mean age 17.5 years (SD not reported), 62.5% male; duration of illness (not reported)	**Design:** Cross sectional **Sampling**: Opportunity sampling from university psychiatric inpatient. **Analysis**: ANOVA **Measure of Suicidality:** Suicidal behaviour (suicide Risk Scale SRS and The Child Suicide Potential Scale CSPS)	Negative symptoms of psychosis **IMV**: Pre-motivational phase	• Negative symptoms of schizophrenia, particularly blunted affect protect against suicidal behaviour
Sharaf, Ossman and Lachine (2013) Country:	Cross-sectional study	N = 200.Schizophrenia (DSM-IV) Sample: Mean age 30.4 years (6.82), 83.5% male; duration of illness 6.22 years (3.02)	**Design:** Cross-sectional design **Sampling**: Convenience **Analysis**: Multiple linear regression analysis **Measure of Suicidality:** Suicide risk	Internalized stigma (internalized stigma of mental illness scale) **IMV**: Threat	• Internalised stigma did not moderate the negative effect of insight on suicide risk.

Study & Country	Type of Study	Participants	Methodology	Protective Factor & associated IMV moderator	Relevant Findings
Egypt			(Suicide probability scale)	to self moderator	
Skodlar, Tomori & Parnas (2008) Country: Slovenia.	Qualitative	N = 19. Schizophrenia (DSM-IV, ICD-10). Inpatient Sample: Mean age 32.10 years (8.02), 63.16% male; duration of illness (not reported)	**Design:** Semi-structured interviews **Sampling**: Opportunity sampling from university hospital. Analysis: Phenomenological analysis **Measure of Suicidality:** Self reports of historical ideation, plans and attempts	Social support **IMV**: Motivational moderator	• 63% (n=12) of people reported they would not commit suicide because of their relationships with significant others (e.g. parents, children, siblings) because it would inflict pain on them. • 32% (n=6) patients reported talking to a therapist would bring short-term relief and a decrease in suicidal intentions
Steblaj, Tavcar and Dernovsek	Case-control study	N = 79 with schizophrenia and affective psychoses (ICD-9) who had committed suicide	**Design:** Retrospective**,** case control **Sampling**: Opportunity sampling from university hospital.	Insight (questionnaire designed specifically	• Odds ratio for presence of insight and acceptance of disease was <1.

Study & Country	Type of Study	Participants	Methodology	Protective Factor & associated IMV moderator	Relevant Findings
(1999) Country: Slovenia		Sample: Mean age 36.8years (13.35) 43.04% male; duration of illness 12 years (9.9)	**Analysis:** Multivariate logistic regression analysis **Measure of Suicidality**: Committed suicide	for the study) **IMV**: Threat to self moderator	• Insight is a protective factor and reduced risk of suicide.
Tarrier, Gooding, Gregg, Johnson and Drake (2007) Country: UK	Randomized Control Trial	N=278. Recent onset schizophrenia. Sample: Mean age 29.6 years (10.2), 69.4% male; duration of untreated psychosis before admission (10 weeks)	**Design:** Utilized data from the RCT SoCRATES trial of cognitive-behaviour therapy. **Sampling**: Randomized **Analysis:** Logisitic regression analysis **Measure of Suicidality:** Suicide behaviour	Negative symptoms (PANSS) **IMV**: Pre-motivational phase	• Emotional withdrawal was significantly negatively associated with suicidal behaviour
Warman, Forman, Heniques, Brown (2004) Country: Pennsylvania	Prospective cohort study	N = 158. Psychotic disorder. Suicide attempters (SCID-I) Sample: Mean age at death 33.5 years (not reported), 43.04% male; duration of illness (not reported)	**Design:** prospective study (2 year) **Sampling**: Opportunity **Analysis:** T-tests, multiple regression. **Measure of Suicidality:** Suicide attempt (had made a suicide attempt	Problem solving **IMV**: Threat to self moderator	• There was a significant association between psychotic disorder and suicide ideation when social problem solving was controlled. • Problem solving has no impact on

Study & Country	Type of Study	Participants	Methodology	Protective Factor & associated IMV moderator	Relevant Findings
,US			within previous 3 weeks) Suicidal ideation (Scales for Suicide Ideation - Current and Worst SSI-C, SSI-W; Suicide Intent Scale SIS)		psychosis and suicide ideation.
Webb, Langstrom, Runeson, Lichtenstein, Fazel (2001) Country: Sweden	Case-control study	N = 13,804. Schizophrenia (ICD-10) Sample: Mean age at death years (unknown), 64.40% male; duration of illness (not reported)	**Design:** Case control national cohort with 32 years follow up. Data from Fazel et al (2009) **Sampling**: opportunity **Analysis:** Log-linear poisson regression models **Measure of Suicidality:** Committed suicide. Cause of Death Register	Low IQ **IMV**: Pre-motivational phase	• Lower IQ appeared protective compared to those of average or higher levels of intelligence (rate ratio 0.71, 0.58-0.86)

From Defeat and Humiliation to Entrapment: Threat to Self-Moderators (TSM)

Threat-to-self moderators are any factors that moderate between the defeat and entrapment pathway (O'Connor et al., 2011). The IMV model assumes that cognitive abilities such as problem solving, coping and memory biases can influence the increase or decrease of suicidality when triggered by a stressor (O'Connor et al., 2011). Therefore any factors that were considered to relate to cognitive abilities were included within this section.

Problem solving. The IMV highlights how problem solving moderates the defeat-entrapment pathway and suggests that individuals who are able to problem solve feel less entrapped which decreases the likelihood of suicidal ideation and vice versa (O'Connor, 2011). No studies were identified that measured this particular relationship in the context of psychosis. However, one study explored problem solving amongst a number of other factors (i.e. hopelessness, substance abuse, depression) and their direct influence on suicidal ideation (Warman, Forman, Henriques, Brown, & Beck, 2004). Warman et al. (2004) used a two-year prospective study with 158 people with (n=55) and without (n=103) psychotic features. Their results revealed that even when problem solving was controlled for there was a strong relationship between suicide ideation and psychotic symptoms suggesting that problem solving may not influence this relationship. Although this study had a small sample, it highlights the possibility that there may be particular symptoms (i.e. social withdrawal) unique to psychosis that influence suicidality such as (Warman et al., 2004). The authors recognised that although psychotic symptomatology had not been captured in the study, this is something that could be explored further. These findings can be considered reliable based on the high ratings achieved in the quality control (see Appendix 3).

Coping. No research had been conducted to illustrate coping as a moderator between the defeat-entrapment pathway. However two studies were identified that demonstrated

coping as protective against risk of suicide (Gooding, Sheehy, & Tarrier, 2013; Oquendo et al., 2005). Oquendo et al. (2005) found high levels of survival and coping skills amongst people with schizophrenia protected against suicide attempts (N=460). However, only 42% of the participants had a psychotic disorder and the sample focused on Latinos versus non-Latinos. Hence, findings may not generalise to other populations. More recently, Gooding et al. (2013) found 44.44% of people with psychosis (N=36) reported that positive thinking would reduce suicidal ideation and behaviour. However, this data was based on participants' responses to a vignette describing a protagonist with psychotic experiences and suicidal thoughts. This meant that the responses were not from participants' own experiences of suicidality (Gooding et al., 2013). Gooding et al.'s (2013) findings need to be taken with caution as quality criteria were not adequately fulfilled (see Appendix 3 & 4) compared to Oquendo et al. (2005). Further research could explore coping as a moderating factor between the defeat-entrapment pathways.

Insight. Insight is defined as the awareness of having a mental illness, adherence to treatment, and the ability to consider anomalous mental events as pathological (David, 1990). Sixty-two percent of people with psychosis have no insight of their disorder at point of entry to service (Robinson et al., 2009). One study investigated the role of insight as a moderating factor (Restifo et al., 2009). However, this cross-sectional study investigated insight moderating between premorbid adjustment and suicide attempts, not between the defeat-entrapment pathway like in the IMV. Restifo et al. (2009) based their hypothesis on the demoralization model which suggests those with good premorbid adjustment combined with high insight are demoralized by their illness and therefore at higher risk of suicidality (Drake, Gates, Whitaker, & Cotton, 1985). Although Restifo et al.'s (2009) study adequately met quality control criteria (see Appendix 3), they measured insight on 2-point scale (0 = has

insight; 1 = lacks insight) which may not have captured the complexity of insight, thus impairing the validity of the findings (Restifo et al., 2009). Furthermore, the power to detect a significant interaction may not have been possible because of some missing data and subdividing the attempter group (Restifo et al., 2009). Results demonstrated that insight did not significantly moderate the relationship between pre-morbid adjustment and suicide attempts (Restifo et al., 2009).

Whilst there was no research to support the role of insight as moderating specifically between the defeat-entrapment pathway of the IMV, there was a vast amount of research within the literature that supported the role of insight within suicidality (Melle & Barrett, 2012). The majority of the research shows evidence to support insight as a risk factor and is a commonly held view in this area (Melle & Barrett, 2012). Melle and Barrett (2012) highlight the complex relationship between insight and suicide in psychosis and discuss the variable and contradictory effects on suicidal risk. Two studies demonstrated protective properties of insight against suicidality (Bourgeois et al., 2004; Steblaj, Tavcar, & Dernovsek, 1999). Steblaj et al. (1999) investigated medical records of 79 people with schizophrenia or affective psychosis who had committed suicide and compared these to matched controls. They found insight as protective against suicidal behaviour. Bourgeois et al. (2004), used data (N=980) from the International Suicide Prevention Trial (InterSePT) (Meltzer et al., 2003) and showed that although insight at baseline was associated with a higher risk of suicidal behaviour at follow-up, the opposite occurred when insight increased during clozapine and olanzapine treatment. However, both Bourgeois et al., (2004) and Steblaj et al.'s (1999) findings need to be taken with caution. Firstly, although Bourgeois et al. (2004) sufficiently meets quality control criteria (see Appendix 3), upon closer examination, it was a secondary study and measured insight using one item only, which may not have captured the complexity of insight.

Furthermore, Steblaj et al. (1999) did not adequately meet quality criteria (see Appendix 3) which suggests the results should be taken with caution. It is likely that these results emerged due to a reduction in symptoms from the positive results of the pharmacological treatment and awareness that their psychosis was improving (Melle & Barratt, 2012). Subsequently, insight in the context of psychosis is more likely to increase risk of suicidality.

Beliefs about psychosis. Barrett et al. (2010) suggested that the contradictory findings on insight were because of the beliefs people with psychosis attached to their disorder. This area is important especially because beliefs can be modifiable targets in therapeutic interventions (Birchwood, Mason, Macmilian & Healy 1993). Using a cross sectional study, Barrett et al. (2010) failed to show any significant moderating effects of beliefs about psychosis among 194 outpatients with a first episode of psychosis on the relationship between insight and suicidal behaviour. However, this was the first study to explore beliefs about psychosis as a moderating factor. More recently, Acosta et al. (2013) investigated the direct relationship between beliefs about illness and suicide attempt amongst 60 outpatients with schizophrenia. Since this study did not use statistical tests of moderation, results could not provide support for the IMV model and could only indicate whether a belief about psychosis was a risk or protective factor. Results showed that beliefs about psychosis were not significantly different in patients with and without a previous history of suicidal attempts. Perhaps the lack of significant results in both studies are because there are alternative variables (i.e. psychotic symptoms), which are involved in the interaction, or perhaps because beliefs about illness are not even relevant for suicidal behaviour to occur (Acosta et al., 2013). Both studies adequately met quality control criteria (see Appendix 3) and suggest that beliefs about illness do not impact on the process of suicidality.

Internalised stigma. Internalised stigma refers to how much someone with a mental health problem agrees with negative stereotypes about the illness and how much they believe they will be rejected or devalued by members of society (Sharaf, Ossman & Lachine, 2013). For example, if an individual recognises that they have psychosis (i.e. insight) and believes they will be rejected by their friends or family (i.e. internalised stigma) this may activate feelings of entrapment and increase the likelihood of suicidality (Sharaf et al., 2013). Sharaf et al. (2013) used a cross-sectional study to investigate internalised stigma as a moderator on the relationship between insight and suicide risk amongst people with schizophrenia and found no significant results. However, results showed that internalised stigma was highly associated with suicide risk. Although Sharaf et al. (2013) used a large sample and met the majority of the quality control criteria (see Appendix 3), they used convenience sampling from an outpatient clinic which may limit generalizability of the findings. Whilst there was no research to support the role of internalised stigma as a moderating factor, this was based on one study and may need further investigations.

From Entrapment to Suicidal Ideation: Motivational Moderators (MM)

Motivational moderators (e.g. social support) can buffer the pathway between entrapment and suicidal ideation (O'Connor, 2011). The motivational moderators identified in this review in the context of psychosis included positive self-appraisals, daily activities, social support and religion.

Positive self-appraisals. Positive self-appraisals (e.g. increased self-esteem or self-confidence) were found to both moderate and protect against suicidality. In a cross-sectional study amongst 77 outpatients with psychosis-spectrum disorders, positive self-appraisals (i.e. appraisals of emotion coping ability) moderated the association between hopelessness and suicidal ideation (Johnson et al., 2010). Appraisals of situation coping and social support did

not show this moderating impact (Johnson et al., 2010). Johnson et al. (2010) highlighted that they focused on suicidal ideation as an outcome and refer to the literature that suggests different suicidal outcomes (i.e. ideation, attempt and committed suicide) are distinct (Kessler, Berglund, Borges, Nock, & Wang, 2005). However, they refer to opposing research which suggests suicidality is a continuum which could indicate their findings can be generalised (Funahashi et al., 2000; Hawton et al., 1998). This study fulfilled the quality control criteria (see Appendix 3) and supports the role of positive self-appraisals as a motivational moderator between the entrapment-suicidal ideation pathway of the IMV. It is worth highlighting that some researchers have described 'hopelessness' as sharing a conceptual overlap with 'entrapment' whereas others have described them as distinct concepts (Johnson et al., 2008). Therefore, a hopelessness-suicidal ideation pathway may not be the same as the entrapment-suicidal ideation pathway. This could be explored further to distinguish whether these terms can be used interchangeably or whether they are different.

Daily activities. Daily activities were identified within the literature as protective against suicidality and reduced feelings of entrapment amongst people with psychosis (De Hert et al., 2001; Gooding et al., 2013). De Hert et al. (2001) reported people with schizophrenia in a control group were four times more likely to have engaged in daily activities compared to those who had committed suicide. Furthermore, a qualitative study (N=36) showed that people with psychosis believed that engaging in activities (e.g. hobbies, relaxation) could help to distract from suicidality (Gooding et al., 2013). Although the quality control (see Appendix 3& 4) was not fulfilled for both studies, findings emphasize the need to encourage individuals with psychosis to engage with activities to protect against suicidality.

Social Support. The IMV model postulates that social support acts to moderate the relationship between entrapment and suicidal ideation (O'Connor et al. 2011). This suggests

that those with limited social support may experience higher levels of suicidal ideation when they feel entrapped and vice versa (O'Connor et al. 2011). One study (which fulfilled quality control criteria, see Appendix 3) assessed social support and its buffering effects on hopelessness and suicidal ideation in a psychosis population (Johnson et al., 2010). Social support was found to negatively correlate with suicidal ideation but did not significantly moderate this relationship (Johnson et al., 2010). The authors suggest that this may be the case when social support is considered in isolation but when combined with other factors (e.g. positive self-appraisals, problem solving confidence) results become significant. No other studies examined social support as a moderating factor in a psychosis context. However, several studies have suggested that social support from family, friends and the wider community can protect directly against suicidality (De Hert et al., 2001; Gooding et al., 2013; Oquendo et al., 2005; Skodlar, Tomori, & Parnas, 2008). Skodlar et al. (2008) demonstrated that sixty-three percent of people with psychosis (N=19) reported that their family protected them from thinking about suicide as they would not want to inflict pain on their parent or child. Gooding et al. (2013) showed that support from a partner was considered the most frequently reported theme (42%) followed by talking to someone (31%), friends and family (25%) and general social support (11%) in a qualitative study (N=36). High levels of responsibility to the family were also identified as being protective against suicidal behaviour in a cross-sectional study (N=460) amongst Latinos (Oquendo et al., 2005). The authors suggest that this may be a reflection of the importance of family within Latino cultures and also suggests how culture can contribute to social support. However, only 42% of the participants were diagnosed with a psychotic disorder and the sample focused on Latinos versus non-Latinos. Hence, findings may not generalise to other populations.

One randomized control trial found that social support (i.e. being a parent, being married or having an intimate relationship) had no protective effects against suicide and found a greater number of those who had an intimate relationship attempted suicide compared to those who had not in the follow-up (Nordentoft et al., 2002). However, although this met quality control criteria (see Appendix 3) this finding could be dismissed because it was not the primary focus of the study and on closer examination, there were very few participants (N=321) that were married (6.2%) or in an intimate relationship (26.5%). In terms of the wider social support system, community-based care, speaking to a therapist and hospitalization were also protective against suicide (De Hert et al., 2001; Gooding et al., 2013; Skodlar et al., 2008). In addition to the social aspect of healthcare professional support, it may be that there are other protective factors underlying this relationship (e.g. instilling hope and lessening the burden). These findings have emerged from a variety of designs and methodologies and focus on different suicidality outcomes (i.e. suicidal ideation and suicidal behaviour). Nevertheless, the data does provide some understanding of social support as an important protective factor by those experiencing psychosis. Further exploration of social support and whether it has any moderating effects would be necessary to provide evidence for the IMV model.

Religion. Religion's association with suicidality amongst people with psychosis also emerged from the literature (Breier & Astrachan, 1984; Jarbin & von Knorring, 2004). Although O'Connor et al. (2011) does not explicitly report religion as a concept within the IMV model, it could be considered appropriate as a motivational-moderator because conceptually, it could motivate an individual to continue living and lessen the sense of entrapment. No studies were identified that examined religion as a moderating factor between risk factors and suicidality amongst people with psychosis. However, several studies had

explored its direct associations to suicidality. Only one quantitative study demonstrated that people with schizophrenia who were linked to a religious group were less likely to have committed suicide (Breier & Astrachan, 1984). However, findings were based on a small sample comparing the characteristics between those with schizophrenia who had committed suicide (n=38) and a control group, therefore causality cannot be inferred. Findings from the mixed methods data also showed some support for religion as a protective factor against suicidality. For example, 25% of people with psychosis (N=145) recognized religion to be protective against suicide (Huguelet et al., 2007). However, Huguelet et al. (2007) found no associations between religion and rate of participants who attempted suicide. Mohr et al. (2006) used qualitative data from that of Huguelet et al. (2007) and found that 33% of the participants (N=115) reported that religion could reduce risk of suicide attempts, for example '*When I feel such despair that I want to jump out the window, I think about God. This helps me to live, even if life is so hard sometimes*'. All three studies met most of the quality criteria (see Appendix 3 & 4) however the findings with regard to religion as protective were relevant for only a small percentage of participants (Breier & Astrachan, 1984; Huguelet et al., 2007; Mohr et al., 2006). Four studies found no significant differences between religion and rate of people with psychosis who attempted or committed suicide (Hu et al., 1991; Jarbin & von Knorring, 2004; Huguelet et al., 2007; Rosmarin, Bigda-Peyton, Ongur, Pargament, & Bjorgvinsson, 2013). On the contrary, the literature also revealed religion to be a risk factor for suicide amongst 10% of people with psychosis (Mohr et al., 2006). For example, '*Spirituality is essential in my life; I know there is life after death. Once I took medication to die in order to experience death and know what it is like afterward*' (Mohr et al., 2006). More recently, Rosmarin et al. (2013) found that negative religious coping (spiritual struggle) was a risk factor for both suicidality and affective symptoms amongst people with psychosis.

Findings from the review suggest that most of the studies have found no link between religion as protective against suicidality in psychosis and the few that do are based on small samples. Contradictory evidence suggests it can in some cases increase the risk of suicide. The inconclusive findings suggests that there may be many mechanisms underlying the association between religion and suicidality in psychosis that have not yet been explored such as the meanings attached to religion for that person (Huguelet et al., 2007). For example Oquendo et al. (2005) found that scores related to moral objections to suicide amongst people with psychosis were particularly high in those who were Catholic and protected against suicide. They suggested that although religion does not necessarily indicate an individual's values, it may relate to moral objections (Oquendo et al., 2005) and it is these underlying aspects of religion that need further exploration.

From Suicidal Ideation to Behaviour: Volitional Moderators (VM)

Volitional moderators (e.g. capability to attempt suicide, access to means, impulsivity) are moderators that may buffer the relationship between the suicidal ideation and behaviour pathway (O'Connor, 2011). No studies were identified in this review that documented any volitional moderators in the context of suicidality amongst people with psychosis. Future research would benefit from testing this pathway in a psychosis context.

Protective Factors at the Pre-Motivational Phase

In the IMV models present state, there are no moderating pathways between the pre-motivational phase (i.e. life events, background factors) and the motivational phase. However, several factors of a biosocial context emerged from the literature in relation to psychosis and demonstrated a protective effect of suicidality. Factors included negative symptoms of psychosis and low IQ.

Negative symptoms of psychosis. Research suggests that when positive symptoms of psychosis are perceived as enduring they can activate feelings of defeat and entrapment (Taylor et al., 2010). Much of the literature suggests that positive psychotic symptoms are a risk factor for suicidality (Fenton, McGlashan & Blyler, 1997; Taylor et al., 2010). However, negative symptoms have showed some evidence as protecting against this risk (Fenton et al. 1997; Schwartz-Stav, Apter & Zalsman 2006; Tarrier, Gooding, Gregg, Johnson & Drake, 2007). Specifically, diminished drive, social withdrawal (Fenton et al. 1997), emotional withdrawal (Fenton et al. 1997; Tarrier et al. 2007) and blunted affect (Fenton et al. 1997; Schwartz-Stav et al., 2006) have been found to significantly lower the risk of long term suicidality in people with psychosis. A comprehensive review, however found that there was no relationship between negative symptoms of psychosis and suicidality (Hawton et al., 2005). However, two of the studies (Schwartz-Stav et al. 2006; Tarrier et al., 2007) that adequately met quality control criteria have been conducted since Hawton et al.'s (2005) review was published. It could therefore be inferred that there are mechanisms such as negative symptoms unique to psychosis that influence suicidality (Warman et al., 2004).

Intelligence Quotient (IQ). Low IQ was found to be protective in a 32 year follow up national cohort study (N=13,804) in Sweden (Webb, Langstrom, Runeson, Lichtenstein, & Fazel, 2001). This may be because people with a high IQ have a greater insight into the impact and consequences of psychosis which could trigger a sense of hopelessness and suicidal ideation, whereas those who are less intelligent may not understand the implications of psychosis (Webb et al., 2001). However, a major limitation to the study is the lack of IQ ratings amongst women and a large amount of missing ratings of IQ for men.

DISCUSSION

The current review identified protective and moderating factors that decreased the risk of suicidality amongst people with psychosis. These were: positive self-appraisals, social support, daily activities, coping, negative symptoms of psychosis, and low IQ. The majority of these factors showed a linear association with suicidality, and only positive self-appraisals showed a significant moderating association (Johnson et al., 2011).

Social support was found to have the greatest number of studies that demonstrated it to be a protective factor compared to the other factors that emerged. People with psychosis often experience social exclusion, stigma (Power & McGowan, 2011) and can experience high expressed emotion from their family members (i.e. emotional over-involvement, criticism and hostility) which can result in feelings of entrapment (Taylor et al., 2010). Therefore, theoretically, social support from family, friends and healthcare professionals could help protect individuals from entrapment. Daily activities were also protective particularly because they could increase social contact and reduce isolation (De Hert et al., 2001; Gooding et al., 2013).

Negative symptoms of psychosis and low IQ had a weaker evidence base, but overall may reduce the risk of suicide. One explanation that negative symptoms were protective may be because a certain level of capability (Joiner, 2005) motivation and energy is required to carry out an attempt, conditions which are generally absent in individuals with psychosis experiencing negative symptoms (Swanson et al., 2006). Interestingly, low IQ is a protective factor of suicide in psychosis population, which is the converse to the general population (Webb et al 2011). Webb et al (2011) suggests that this is because people with a high IQ may have a greater understanding of the consequences of psychosis, hence be more distressed.

Positive self-appraisals were the only factor investigated as a significant moderating factor. This indicated that people with psychosis who are feeling a sense of hopelessness (i.e. entrapped) are less likely to feel suicidal if they have positive views of their ability to cope with emotions (Johnson et al. 2010). Coping was also found to directly reduce risk of suicide (Gooding et al., 2013; Oquendo et al., 2005). This is not surprising considering negative appraisals can activate entrapment which increases the likelihood of suicide (Birchwood et al., 1993; Taylor et al. 2010).

Studies also investigated religion, internalized stigma, insight, problem solving and beliefs about psychosis and their association with suicidality. However, results demonstrated no significant association to suggest they were protective against suicidality and were often contradictory. For example religion instilled hope and protected against suicide for some people with psychosis, however, for others it encouraged them to attempt suicide so they could move onto an afterlife (Mohr et al., 2006). Both insight and internalized stigma had been identified in the research as moderating factors on risk and suicidality. However, both indicated an increase in risk. This is in line with the literature on psychosis that indicates stigma can lead to feelings of entrapment (Birchwood, 2003) and those with insight are at an increased risk as they are more aware of the negative consequences of psychosis (Bourgeois et al. 2004). Beliefs about psychosis and problem solving did not show significant findings.

Empirical Support for the Integrated Motivational Volitional Model

The IMV is a useful framework as it recognizes the complex interplay of factors that increase the risk of suicidality. It also illustrates where the factors are located along the pathway and which of these facilitate the transition between the pathways. Furthermore, the IMV avoids the language of 'at risk' individuals i.e. people with psychosis are not 'at risk' because they have psychosis but because it may involve vulnerability and environmental

difficulties. Subsequently, consideration to the various factors that individuals may be experiencing and at identifying which phases of the IMV they are on would be helpful when tailoring interventions to prevent risk of suicide.

The review failed to identify moderating factors that buffered the IMV pathways between defeat-entrapment (threat-to-self moderators) and suicidal ideation-suicidal behaviour (volitional moderators). This may be for two reasons, firstly because interaction effects have not always been employed in the area of moderating factors against suicidality (Johnson et al., 2011). Secondly, although the IMV model has been based on previous models, it is still relatively new and thus its concepts not fully tested. This may explain why there are only a few studies in this area and why some of the studies have not focused on the pathways specified in the IMV model. However, the empirical research provides partial support for the motivational phase of the model with positive self-appraisals buffering the entrapment-suicidal pathway (O'Connor, 2011). Furthermore, low IQ and negative symptoms of psychosis could reflect the pre-motivational phase of the IMV because it considers cognitive and biological factors at this stage (O'Connor, 2011). It is important to note that there were additional factors associated with psychosis and suicide that had been identified but were not accounted for within the IMV model (e.g. insight, religion, negative symptoms). This suggests that there are other mechanisms involved in the process of suicide in the context of psychosis.

Strengths and Limitations

There are some limitations of the current review that deserve comment. Firstly, the majority of these studies were cross-sectional which limits the extent to which findings can be interpreted as evidence of causality. Furthermore, it was difficult to draw strong conclusions

from the findings particularly where studies had investigated protective factors which were not the primary focus of the study or where there was only one study to support it.

The age bracket of 15-25 years old for a young person meant that any article that included a participant of this age was retrieved in the results. The mean age for the majority of the studies was out of this age bracket. Subsequently, although the results may not be generalisable to young people, the findings could help to inform an understanding of moderating and protective factors against suicidality amongst young people with psychosis. Likewise the broad search terms for psychosis meant that not all of the studies were specific to a first episode of psychosis, however they can be generalised to disorders within the psychotic spectrum.

Strengths of the review include moving away from a medical model of risk and placing more emphasis on an individual's own protective factors that can be built upon. Furthermore, it is the first review to use the IMV model as a framework for understanding suicidality amongst people with psychosis. Finally, it highlights how there may be more specific factors unique to people with psychosis that need to be incorporated in a psychosis specific IMV model.

Clinical and Research Implications

The current review pinpoints factors that may be particularly relevant for people with psychosis to protect against suicide risk. Positive self-appraisals, social support and daily activities are all characteristics which can be modified, and would be appropriate targets for psychosocial interventions aimed at protecting people with psychosis from suicidality. For example, Cognitive Behavioural Therapy could be used to target self-appraisals, particularly where those with psychosis report feelings of hopelessness and suicidal ideation. Given that

social support (i.e. family, friends, healthcare professionals) is a suicide protective factor, interventions aimed at families (i.e. and promoting social opportunities; McGowan, Iqbal & Birchwood, 2009) may be beneficial in protecting young people with psychosis against suicide. This would help combat isolation, social withdrawal and promote an increased sense of belonging. Low IQ and negative symptoms were also identified as protecting against suicidality, and may better inform clinical risk management.

Future research could focus on expanding the evidence base for the IMV model by employing longitudinal designs, larger sample sizes and tests of interactions in their analyses. Key questions that could be considered in future studies include: Which factors moderate between defeat-entrapment and the suicidal ideation-behaviour pathways? What factors moderate the relationship between insight and suicidality? What are the underlying mechanisms of religion (e.g. moral objections, meaning of religion, social support) and what are the specific daily activities that protect against suicide? Clarification of the direction and strength of protective and moderating factors may further enable researchers and clinicians to improve prevention and management of suicide risk.

CONCLUSIONS

Overall, research into protective and moderating factors that buffer against suicidality amongst people with psychosis is limited. Given the high suicide attempt rates that have been documented in a psychosis population would suggest the need for empirical studies on such factors. Positive self-appraisals, social support, negative symptoms, coping, low IQ and daily activities were found to be protective against suicide. Further research that investigates moderating factors that buffer against suicide in the context of psychosis could be used to inform prevention, intervention and management of the risk of suicide.

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CHAPTER 2: RESEARCH PAPER

Does suicidal desire and acquired capability increase risk of suicidality in young people with a first episode of psychosis?

ABSTRACT

Background: Rates of suicide amongst young people with a first episode of psychosis are high. The interpersonal-psychological theory of suicidal behaviour suggests that an individual who does not feel they belong and believes they are a burden, combined with the capability to attempt suicide is more likely to make a suicide attempt. The current study aimed to investigate this theory's hypotheses in the context of psychosis.

Methods: Young people with a first episode of psychosis who considered suicide (n=15), had attempted suicide (n=15) or control (n=15) were compared on self-report measures of suicidal desire and capability for suicide.

Results: Participants were mainly; single, White-British, unemployed, 25 year old, moderately depressed, males, who had misused substances. Results suggested that all participants perceived themselves to be a burden, did not feel they belonged and had the capability for suicide. No significant between group differences were found.

Conclusions: The concepts of the interpersonal-psychological theory appear to resonate with the experience of psychosis, regardless of suicidality. This may explain why this study was unable to distinguish between those who just think about suicide and those who attempt in a psychosis population. Future research could assess specific features of psychosis and their influence on suicidality.

Keywords: first episode of psychosis, suicide, attempt, ideation, acquired capability, interpersonal theory

INTRODUCTION

Suicide

Suicide is defined as *'the act of an individual intentionally ending their own life'* (O'Connor & Nock, 2014) and ranks as the thirteenth major cause of death worldwide with approximately one million suicides each year (Krug, Dahlberg, Mercy, Zwi, & Lozano, 2002) and 10 to 20 million people attempting suicide per year (World Health Organization; WHO 2008). In the UK, suicide rates have been between 16.8 and 17.7 per 100,000 in the population (ONS, 2012) and are particularly common amongst those aged 15-35 years (WHO, 2008).

Suicide and Psychosis

People with mental health problems are at higher risk of attempting suicide and 12 times more likely to commit suicide than those without such issues (Dutta et al., 2010). Between 21% and 50% of people with a first episode of psychosis (FEP), consider suicide within the first year after an initial contact with mental health services and 10% attempt suicide (Bertelsen et al. 2007; Petersen et al., 2005). Approximately 1.5% die from suicide within 18 months of treatment for a FEP (Fedyszyn, Harris, Robinson, Edwards & Paxton, 2011).

Psychosis has been described as a traumatic life event that requires significant psychological adjustment by individuals and their families (Birchwood, 2003). Given that the typical onset of psychosis occurs in late adolescence and early adulthood, the consequences of the disorder at this stage in life can disrupt an individual's developmental trajectory (McGorry, Henry & Power, 1998). Typically, the mean onset for men is 18-25 years old and for women, between 25-35 years old (Ochoa, Usall, Cobo, Labad & Kulkarni, 2012). Relationships, employment and personal achievements may be seriously affected (Gumley & Schwannauer,

2006). Furthermore, many individuals with psychosis also experience stigma, social exclusion, and loss (Power & McGowan, 2011). Over 50% of people with psychosis report 'post-psychotic depression' following a FEP (Birchwood, Iqbal, Chadwick, & Trower, 2000) and are predisposed to other emotional disorders such as post-traumatic stress disorder (PTSD; Morrison, Frame & Larkin, 2003) and social anxiety disorder (Cosoff & Hafner, 1998). Negative appraisals about psychosis (i.e. lack of control, failure) have been found to be predominant precipitators of depression (Birchwood, Mason, MacMillan, & Healy, 1993; Birchwood, Meaden, Trower, Gilbert, & Plaistow, 2000) and suicidal ideation (Taylor et al., 2010). These perceptions have been conceptualized as defeat and entrapment which are important psychological mechanisms underpinning suicidality amongst people with psychosis (Rooke & Birchwood, 1998; Taylor et al., 2010) and central to models explaining suicidality (e.g. Integrated Motivational-Volitional model of suicidal behaviour) (O'Connor, 2011). Suicidal behaviour can be perceived as the only means of escaping entrapment (Williams, 1997). The profiles of those with psychosis who do attempt suicide tend to be young, White, single, educated, unemployed males in the first few years of onset of psychosis (McGorry, Henry, & Power 1998; Hor & Taylor, 2010). Between 60-70% of people with psychosis use illicit substances (Buckley, Correll & Miller, 2007) and 20-60% have had a substance use disorder at some stage in their life (Lambert et al. 2005). Reasons for this include it providing them with short-term relief from psychosis symptoms and an escape from entrapment (Lambert et al., 2005).

Theories of Suicide

Several theoretical models have been developed over the last 30 years to help to understand the mechanisms underlying suicidality (i.e. Joiner, 2005; Mann, Waternaux, Haas &

Malone, 1999; Sheidnman, 1998). The majority of these models do not explore the transition between suicidal ideation (thoughts) and suicidal behaviour (O'Connor, 2011). Early theories of suicide were initiated by Freud who proposed that suicide was a result of aggression turned inward, the '*death instinct'* (Freud, 1961). However, more sustained research began in the 1950s by Shneidman, founder of the American Association of Suicidology who went onto develop the '*cubic model of suicide'* suggesting that suicide is more likely to occur from a combination of stress, psychache and perturbation (O'Connor et al., 2011). During the 1990s Lester explored the usefulness of theories of suicide by rating ten statements that operationalized 15 theories as present or absent in the lives of thirty famous suicides taken from detailed biographies. Lester found that Beck's cognitive triad of negative thinking (1976) , Shneidman's cubic model of suicide (1998), and Maris's (1981) hypothesis of 'suicidal careers' involving complex mixes of biological, social and psychological factors were the most applicable at describing suicidal lives than the other theories. Freud's theory was considered the least applicable theory (Lester, 1994).

Current models of suicide have been guided by diathesis stress, cognitive and behavioural perspective (O'Connor & Nock 2014). For example, various researchers (i.e. Mann, Watermaux, Haas & Malone, 1999; Schotte & Clum, 1987) have used the stress-diathesis model to illustrate how stress can trigger harmful cognitive vulnerabilities, such as social problem solving (O'Connor & Nock, 2014). Other theoretical developments include suicide as escape from the self (Baumeister, 1990), the cognitive model of suicidal behaviour focusing on cognition as risk (i.e. Wenzel & Beck 2008) and various personality factors such as impulsivity have been taken into consideration as increasing the risk of suicide. The majority of these models have a limited focus and do not offer an integrative explanation (O'Connor & Nock, 2014).

Furthermore, they do not explore the transition between suicidal ideation (thoughts) and suicidal behaviour (O'Connor, 2011) which may help to explain why some people who think about suicide go on to attempt suicide and others do not. However, the Interpersonal-Psychological Theory (IPT) of Suicide (Joiner, 2005; Van Orden et al., 2010) is currently the only predictive theory which has explored this transition and is supported by a growing body of empirical evidence (Joiner et al., 2009; Nademin et al., 2008; Van Orden et al., 2008, 2010). More recently, O'Connor (2011) used the IPT concepts as moderators to describe the pathway between suicidal ideation and suicidal behaviour within an Integrated Motivational-Volitional model of suicidal behaviour (IMV) based on major components of the most prominent models from the literature.

The present study focuses on the processes to distinguish differentiate between those who think about suicide and go on to attempt suicide and those who do not in a sample of people with psychosis. Since the IPT is the only theory that identifies this process it will be used as a foundation for this study.

Interpersonal-Psychological Theory (IPT) of Suicide. IPT is an innovative theory that combines interpersonal factors and theories from existing research to postulate that a combination of three factors (i.e. thwarted belongingness, perceived burdensomeness and acquired capability) increase the risk of suicide (Joiner, 2005). Joiner (2005) explains that the desire for suicide is initiated from both: (1) perceived burdensomeness, which refers to the belief that an individual's existence burdens others (i.e. friends, family, society), and (2) thwarted belongingness which refers to a feeling of being estranged from others and not feeling included (Van Orden et al., 2010). This reflects the literature on psychosis, which suggests they may experience social isolation, stigma, perceptions of failure, entrapment and defeat (Birchwood, 2003; Iqbal,

Birchwood, Chadwick & Trower 2000) which could lead to a desire for suicide as defined by IPT (Van Orden et al., 2008). It is only when acquired capability combines with suicidal desire that a suicide attempt is likely to occur, hence is the distinctive third factor that discriminates between those who think about suicide and those that attempt (Van Orden et al., 2010). Joiner (2005) proposes that the development of acquired capability for suicide can occur through repeated exposure to painful and distressing events. Adolescents who have previously attempted suicide have been shown to have higher pain thresholds and tolerance (Orbach, Mikulincer, King, Cohen, & Stein, 1997). While psychotic experiences are not necessarily distressing, research has shown that appraisals and responses to the anomalies can produce distress and trauma (Brett, Heriot-Maitland, McGuire, & Peters, 2013; Jackson, Knott, Skeate & Birchwood, 2004). Furthermore, psychotic experiences have been associated with risky behaviours (e.g. violence, substance abuse, sexual risk behaviour) which, could also contribute to acquired capability (Brown, Lubman, & Paxton, 2010; Douglas, Guy, & Hart, 2009; Large, Mullin, Gupta, Harris, & Nielssen, 2014; Van Orden et al., 2008). Therefore, distress derived from psychotic experiences could serve as a mechanism for developing acquired capability for suicide. However, Joiner (2005) suggests that these experiences do not necessarily contribute to suicidal desire as they are not necessarily associated with psychopathology (e.g. car accidents, accidental injury, sky diving) (Smith, Cukrowicz, Poindexter, Hobson, & Cohen, 2010).

Generally models of suicidality focus on aspects of suicidality common to a range of disorders and can be applied universally, (i.e. a 'one size fits all' approach) (Bolton, Gooding, Kapur, Barrowclough, & Tarrier, 2007). However, there may be specific factors which underlie suicidal behaviour in young people with a FEP (Bolton et al., 2007). The IPT model supports the

idea of a common multi-factor mechanism underlying suicide regardless of diagnosis. O'Connor et al. (2011) suggests that models of suicidality need rigorous empirical investigations that test the components amongst differing populations to understand what works for whom, when and where. Interventions will differ depending on whether suicidal behaviour amongst young people with psychosis is determined by a set of factors common in other populations, or factors specific to psychosis (Bolton et al. 2007). A FEP may theoretically contribute to acquired capability and can affect perceived burdensomeness and thwarted belongingness. However, these assumptions in the context of FEP have not yet been tested empirically. Given the high suicide attempt rates amongst people with psychosis, the investigation of the IPT will allow for the development of specific and appropriate suicide prevention and interventions for suicidal individuals experiencing psychosis.

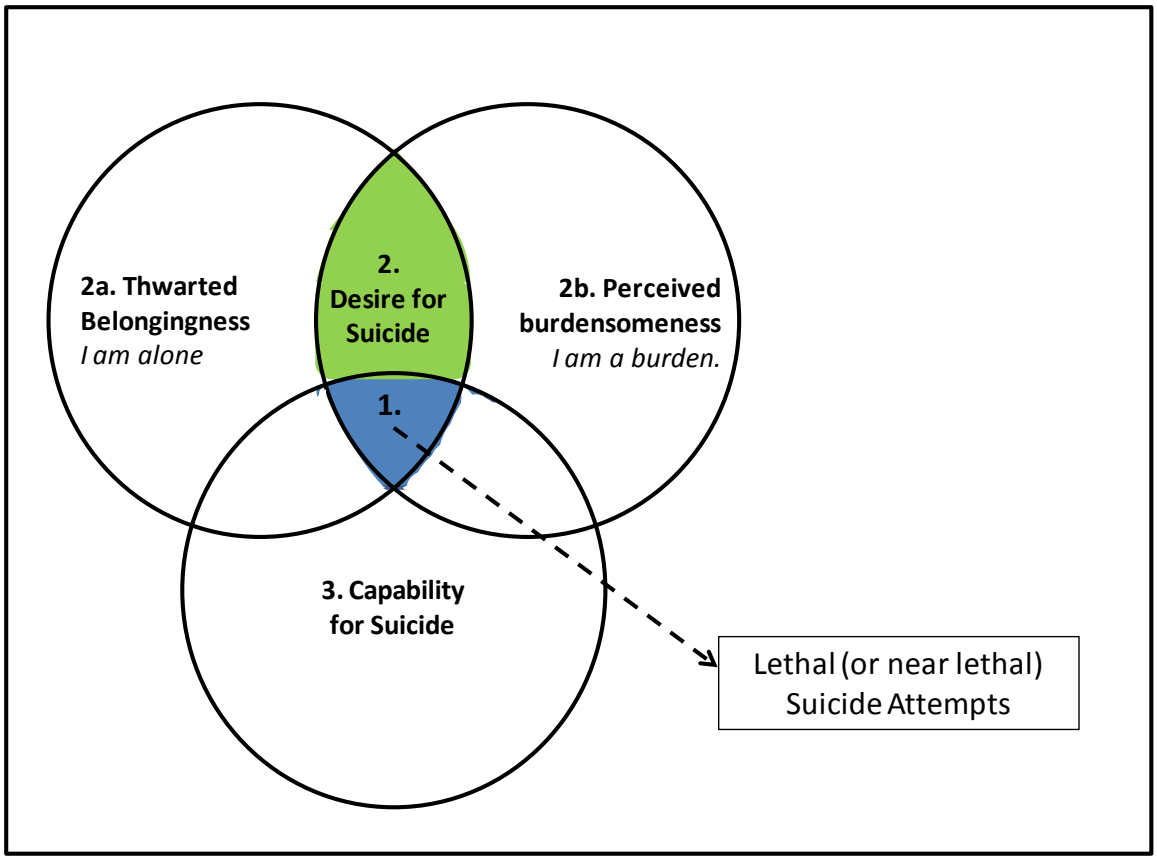
Aims

It is yet unknown whether the IPT applies to those with a FEP. This information is important because there is currently a gap in the literature demonstrating differences between individuals who think about suicide and those that attempt suicide amongst young people with FEP. Given that IPT is an intuitive theory that identifies this distinction, the purpose of the current study was to test the components of the model in the context of FEP. The primary aim of this study was to compare self-reported suicidal desire (i.e. thwarted belongingness, perceived burdensomeness) and acquired capability among three groups of people with a FEP: those who had experienced suicide ideation with no history of suicide attempts (suicide ideators), those who had previously attempted suicide (suicide attempters), and those who had not previously attempted or experienced suicidal ideation (controls).

Objectives

The primary objective (Figure 1) was to investigate whether people with psychosis who had attempted suicide (i.e. 'engagement in a potentially self-injurious behaviour in which there is at least some intention of dying as a result of the behaviour'; O'Connor & Nock, 2014) had both a greater desire to die by suicide (i.e. the desire to engage in suicidal behaviour which encompasses a combination of both thwarted belongingness and perceived burdensomeness; Joiner, 2005) combined with the ability to do so compared to those who have not attempted suicide. According to Joiner (2005) suicide ideation (i.e. thoughts about suicide) is an operationalized form of the concept of suicidal desire (Van Orden et al., 2008). Throughout the study, the term suicidal desire is used when referring to a combination of thwarted belongingness and perceived burdensomeness. The secondary objective (Figure 1) was to explore the following questions in young people with psychosis:

- Do people with FEP who have attempted suicide have a greater desire for suicide (defined as thwarted belongingness and perceived burdensomeness) compared to those who have just thought about killing themselves and not made an attempt?
- Do people with FEP who have attempted suicide have a greater acquired capability for suicide compared to those who have not?



Key: 1. primary objective. 2. and 3. secondary objectives.

Figure 1: Objectives of the research based on Thomas Joiner's IPT theory (from Van Orden et al., 2010)

Hypothesis

Based on Joiner's theory, it was hypothesised that (see Figure 2):

(1) Young people with psychosis who had no history of suicide attempts and had not experienced suicidal ideation would have lower scores on thwarted belongingness, burdensomeness and capability measures compared to the other two groups.

(2) Young people with psychosis who experienced suicidal ideation but no history of suicide attempts would score highly on thwarted belongingness and burdensomeness compared to the control group but would have lower scores on capability measures compared to the suicide attempt group.

(3) Young people with psychosis who had a history of attempted suicide would score higher on measures of thwarted belongingness and burdensomeness compared to the control group, and higher on capability measures compared to the suicidal ideation group and control group.

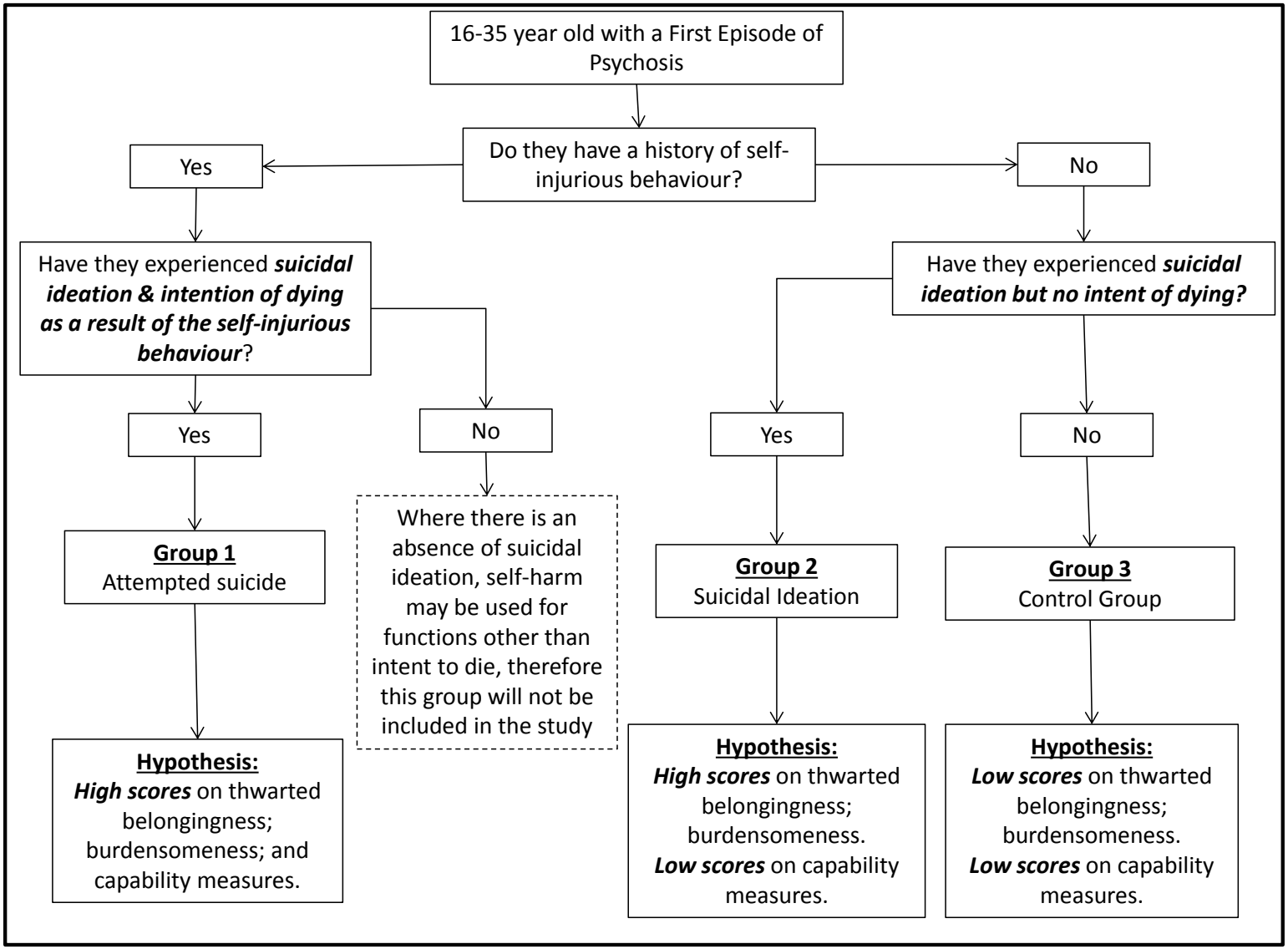


Figure 2: Outline of study design and hypothesis

METHOD

Design

A retrospective, cross-sectional independent measures design was used to investigate the IPT by comparing the scores of several questionnaires between three groups of participants (N=45) with a FEP (as defined in the ICD-10 and determined by the participant's psychiatrist). A natural groups design meant that participants were assigned to groups based on whether they had thought about and/or, attempted suicide or not. Specifically the groups were as follows:

1. Group one included all those who had attempted suicide (defined as '*engagement in a potentially self-injurious behaviour in which there is at least some intention of dying as a result of the behaviour*' O'Connor & Nock, 2014, in the last two years);
2. Group two were those who had experienced suicidal ideation and no history of suicide attempt
3. Group three were the control group who had no history of suicidal ideation or attempt (see Figure 2).

Participants and Setting

Purposive sampling was used to recruit young people (aged 16-35 years), males and females, with a FEP. Care co-ordinators selected people from their caseload whom they thought were appropriate for the study (Barker, Pistrang, & Elliot, 2002). They were recruited from an Early Intervention Service (EIS) based in an NHS Trust in the West Midlands. The population of the West Midlands has been estimated at 1,085,400, with 53.1% of which are White-British, followed by Pakistani (13.5%), Indian (6.0%) and Black Caribbean (4.4%). Forty percent of the

population live in areas described as the most deprived 10% in England (Office of National Statistics, 2014).

Power Calculation

A priori power analysis using the power calculation programme G*Power 3 and Cohen's (1988) conventions for describing effect sizes was performed to find out how many participants were required for this study for it to yield sufficient statistical power for a significant result (see Appendix 5). It was computed that a minimum total amount of 40 participants would be needed for an analysis of variance (ANOVA) assuming a = 0.05 and 0.8 level of power (Figure 3). However, since this study is using experimental measures that have not been deployed in a psychosis population before, the effect size is unknown. On closer examination of a similar study using a different population, Smith et al. (2010) employed a total sample of N=44.

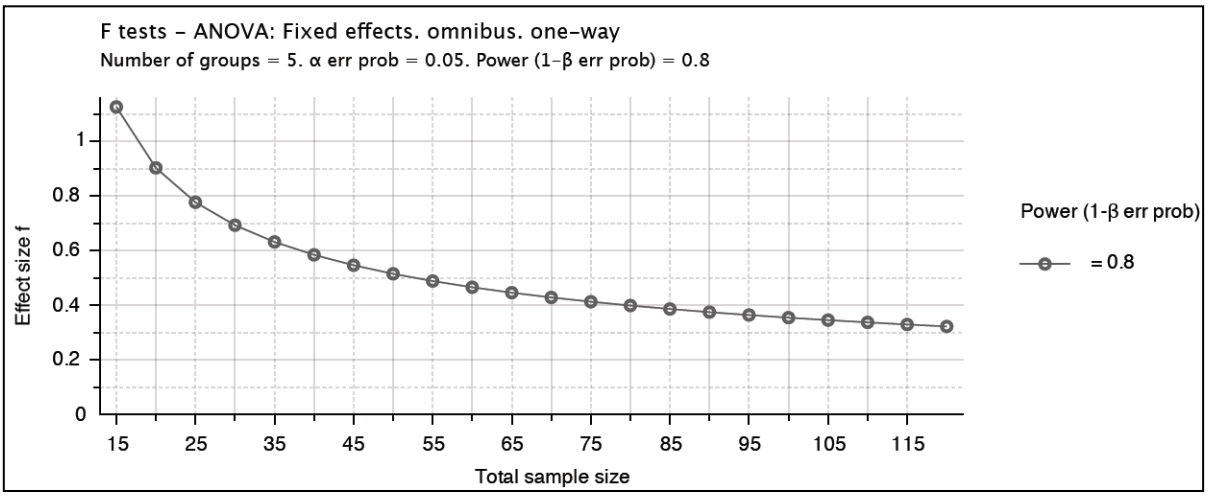


Figure 3: sample size

Taking this into account, this study aimed to recruit 45 participants based on Smith et al.'s (2010) study and to ensure a suitable level of power was achieved.

Lastly, it is worth mentioning that participants were selected through availability and a willingness to participate in a sensitive topic area. Lester and Wilson (1999) reported difficulties in recruiting people with psychosis, mentioning that those with predominantly positive symptoms may be suspicious of a researcher's motives, while those with negative symptoms may be unmotivated to take part. With this in mind, along with the fact that Joiner's theory has not been conducted in a psychosis sample, a small sample was expected.

Procedure

Ethical and Research and Development approval was obtained from the appropriate committee within the participating NHS Trust. The researcher approached the EIS clinical teams, team managers and care-coordinators to explain the research study. They were then requested to identify anyone in their caseload with a FEP with either: (1) a history of attempted suicide, (2) had previously had suicidal ideation, (3) no history of attempt or ideation. Individuals were assigned to 'suicide attempt', 'suicide ideation', or 'control' group based on this. Eligible participants who met the inclusion criteria and none of the exclusion criteria (Appendix 6) were initially approached by the care co-ordinator and provided with a letter (Appendix 7) to introduce the study and a participant information sheet which included the following information: the purpose and nature of the research; what the research involves, its benefits, risks and burdens; confidentiality; withdrawal from the study; and sources of support (Appendix 8). Upon their consent, contact details of clients willing to participate were forwarded onto the researcher. Once potential participants had been selected, they were approached by the researcher and invited to take part in the research. It was made clear to them that their participation would not affect

current or future treatment from the mental health services. Participants took up to one week to decide whether they wanted to participate and was voluntary.

Once participants verbally consented to participate, the researcher arranged a date, time and place which was most convenient for the participant to conduct the study at. They were further asked for written consent to take part in the study (Appendix 9). For participants aged between 16 and 18 years old, parental consent was required (Appendix 10). As part of the consent procedure, confidentiality and anonymity was ensured. It was explained to them that if they disclosed any cause for concern by presenting a current risk to themselves or others, the researcher would contact the clinical team, inform their care coordinator and follow Trust policies. Regardless of risk, all participants received two follow-up phone calls from the researcher after the study to assess their wellbeing and explore any issues had come about from the research (Taylor et al. 2010). The researcher also liaised with care co-ordinators to keep them informed irrespective of whether the participant was at risk or not and recorded their contact in their medical notes. Participants were free to leave the study at any time. If a potential participant did not wish to participate, they were not under pressure to change their minds.

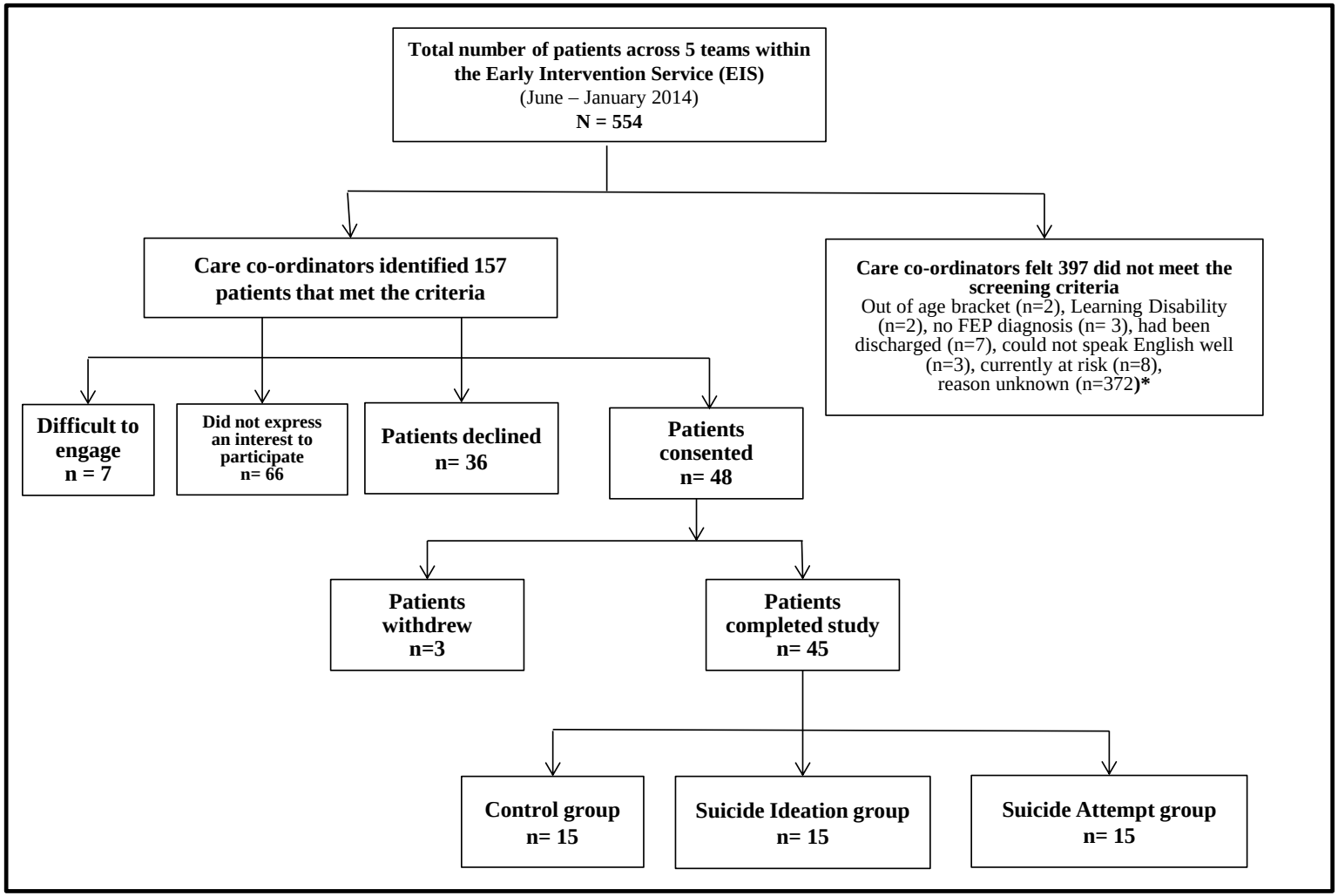
Overall, the interview took between 60-90 minutes and consisted of a range of standardised questionnaires that measured the IPT components (see Table 1).

Table 1: Measures used to map onto the IPT components

Hypothetical Concepts from the IPT	Measure to assess concept
Suicidal Desire (i.e. a combination of thwarted belongingness and perceived burdensomeness)	
Perceived Burdensomeness	• Interpersonal Needs Questionnaire (INQ) Burdensomeness subscore • Responsibility to Family subscale of the Reasons

	for Living Inventory
Thwarted Belongingness	• Interpersonal Needs Questionnaire (INQ) Belongingness subscore • The Basic Need Satisfaction in Life Scale (BNS-LS) • Revised UCLA Loneliness Scale
Acquired Capability	• Acquired Capability for Suicide Scale (ACSS) • Painful and Provocative Events Scale (PPES)

Participants could decide whether they preferred to administer the questionnaire themselves or dictated verbally by the researcher. If participants were distressed, the researcher stopped the session and encouraged them to discuss their concerns. A letter was sent to their GP informing them of their patients' involvement in the study (Appendix 11). Demographic information, about participants was also obtained (Appendix 12). Figure 4 outlines the recruitment response for this study.



*Reasons for not meeting the criteria were unspecified by care co-ordinator

Figure 4: Recruitment response

Measures

Columbia-Suicide Severity Rating Scale (C-SSRS). Presence of past and current suicidal ideation (within the past six months) and behaviour (within the past two years), was assessed with the Columbia-Suicide Severity Rating Scale (C-SSRS). The C-SSRS rates an individual's degree of suicidal ideation on a scale, ranging from "wish to be dead" to "active suicidal ideation with specific plan and intent." The scale identifies behaviours, which may be indicative of an individual's intent to commit suicide. An individual exhibiting even a single behaviour identified by the scale was 8 to 10 times more likely to commit suicide (Posner et al., 2008). It was also used to measure the intensity of suicidal ideation at its most severe and to assess the number of suicidal behaviours. Suicidal behaviours were defined as an actual suicide attempt, an interrupted attempt, or an aborted/self-interrupted attempt (Oquendo, Halberstam, & Mann, 2003). Where participants had disclosed any previous experience of suicidality, participants could also respond to an open ended question regarding their experience. Subsequently, qualitative feedback was also captured on this measure. The C-SSRS has demonstrated convergent and divergent validity for the scale as well as internal consistency data (Posner et al., 2011).

Maudsley Addiction Profile (MAP) Form B. A brief assessment of the participants' substance use was also collected. The B form of the MAP is a checklist of substances used in the last 30 days (Marsden et al., 1998). MAP asks participants to recall the total number of days used in the past month, the typical amount used across a day when using and their main route(s) of drug use administration. Related street names of the substances as well as age of first use will also be added (Appendix 13). The MAP was used in this research to collect information about substance use, which may have affected psychosis symptoms and /or suicidality.

Beck Depression Inventory-II (BDI). Symptoms of depression were assessed using the Beck Depression Inventory-II (BDI). The BDI is designed to measure the amount of depressive symptoms experienced by an individual over the previous two weeks (Beck, Steer, & Brown, 1996). The BDI-II is a revision in 1996 of the original BDI. It is based on the DSM-IV criteria for depression and consists of 21-items based on a Likert scale of 0-3. Higher scores represent a higher occurrence of symptoms associated with depression (0-13: minimal depression; 14-19: mild depression; 20-28: moderate depression; and 29-63: severe depression). The BDI has been shown to have high internal consistency (α=.91) and a high one-week test-retest reliability (Pearson r = 0.93) (Beck, Steer, Ball, & Ranieri, 1996; Beck, Steer, & Brown, 1996).

Measures to Assess Suicidal Desire (i.e. a combination of thwarted belongingness and perceived burdensomeness).

Interpersonal Needs Questionnaire (INQ). The INQ (Appendix 14) is designed to measure current beliefs about the extent to which individuals feel connected to others (i.e. belongingness) and the extent to which they feel like a burden on the people in their lives (i.e. perceived burdensomeness) (Van Orden, 2009). It consists of 25 items, ten items measure belongingness (e.g. these days other people care about me') and 15 items measure perceived burdensomeness (e.g. these days I feel like a burden on the people in my life). Items are rated on a 7-point Likert scale 1 (not at all true) to 7 (very true). Higher numbers reflect higher levels of thwarted belongingness and perceived burdensomeness. Internal consistency for belongingness (alpha coefficient = 0.85) and the perceived burdensomeness items (a = 0.89) are good (Van Orden, 2009). Several studies have used different versions of the INQ amongst different population, currently there are no studies that have used the INQ within a FEP population (Marty,

Segal, Coolidge, & Klebe, 2012). Statistics previously reported from non-FEP samples will be utilized to explore any differences.

The Basic Need Satisfaction in Life Scale (BNS-LS). The BNS-LS (Appendix 15) is designed to measure the satisfaction an individual has with autonomy (e.g. I feel like I am free to decide for myself how to live my life), competence (e.g. People I know tell me I am good at what I do) and relatedness (e.g. I get along with people I come into contact with) in their life (Gagné, 2003). It consists of 21 items and are rated on a 7- point Likert scale 1 (not at all true) to 7 (very true). Higher scores indicate greater sense of basic need satisfaction. Gagné (2003) reported adequate internal consistency coefficients for all three subscales.

Revised UCLA Loneliness Scale. The Revised UCLA Loneliness Scale (Appendix 16) is designed to measure an individuals' perception of loneliness related to their experience with social relationships (e.g. 'I feel isolated from others', and 'I feel part of a group of friends') (Russell, Peplau, & Cutrona, 1980). It consists of 20 items which are rated on a Likert scale of 1 (never) to 4 (always). Responses to each question are added together. The average loneliness score on the measure is 20. A score of 25 or higher indicates a high level of loneliness. A score of 30 or higher indicates a very high level of loneliness. Russell, et al. (1980) report high internal consistency for the scale ($\alpha = .94$), as well as support for concurrent and discriminant validity.

Responsibility to Family subscale of the Reasons for Living Inventory. The Responsibility to Family subscale of the Reasons for Living Inventory (RLI-RF; Appendix 17) measures an individual's beliefs with regard to their responsibilities to the family in relation to reasons to not attempt suicide (Linehan, Goodstein, Nielsen, & Chiles, 1983). A lack of involvement or responsibility in terms of contribution to the family plays a part in the construct

of perceived burdensomeness. Furthermore, it can indicate incompetence to be accountable for others (Van Orden, 2009). The subscale consists of seven items which are rated on a 6-point Likert scale from 1 (not at all important) to 6 (very important). Higher scores represent higher levels of responsibility tied to greater importance for staying alive. Osman et al. (1999) provide construct validity for the scale as well as internal consistency data ($\alpha = .93$).

Measures to assess Acquired Capability for Suicide Behaviour.

Acquired Capability for Suicide Scale (ACSS). The Acquired Capability for Suicide Scale (ACSS) (Appendix 18) is designed to measure the degree to which an individual perceives themselves as capable of carrying out or exposing themselves to potentially dangerous situations, including suicide (Bender, Gordon, Bresin, & Joiner, 2010). It consists of 20 items and uses a 5 point Likert scale to rate the ACSS items. Higher scores indicate higher levels of acquired ability for lethal self-injury (Bender et al., 2010). It has been used in various studies (Van Orden et al., 2008; Bryan, Cukrowicz, West, & Morrow, 2010). The ACSS showed good internal consistency (a= 0.88) (Smith et al., 2010).

Painful and Provocative Events Scale (PPES). The PPES is designed to measure the frequency with which an individual has been exposed to a variety of painful and/or provocative experiences (Bender et al., 2010). It consists of 26 items which asks how many times they have experienced certain events (e.g. shot a gun, intentionally hurt animals, played contact sport, been victim of abuse). The items are rated on a 5 point Likert scale to indicate how many times an individual has engaged or been exposed to that event (1 = never, 2 = once, 3 = two-three times, 4 = four-twenty, 5 = more than twenty times). Higher scores indicate greater exposure to painful

and provocative life events. PPES's coefficient alpha was 0.66 and reliability (Cronbach's alpha = 0.71) (Bender et al., 2010).

Data Analysis

Data was analyzed using Statistical Package for Social Sciences (SPSS) for windows version 21. Initially the data was screened for outliers or missing data points. Five outliers were identified after constructing a dissimilarity matrix which showed a high sum of squared Euclidean difference for paired wise comparison (Appendix 19). These were reviewed for clinical validity and were not deleted as their responses were credible. Subsequently, these outliers were included in all further analyses. Descriptive statistics were performed. Tests for normality of distribution were conducted using the Kolmogorov-Smirnov statistic to assess the normality of the distribution of scores for the variables of interest (Pallant, 2002). Results demonstrated that the variables did not violate the assumption of normality (Table 2). Suicidal desire (i.e. a combination of thwarted belongingness and perceived burdensomeness) variables were normally distributed including the INQ (K-S = 0.602, p =0.862), the BNS (K-S = 0.544, p = 0.929), UCLA (K-S = 0.948, p = 0.330) and the RLi (K-S = 1.252, p = 0.087). Acquired capability variables were also normally distributed including the ACSS (K-S = 0.690, p=0.727) and PPES (K-S = 0.709, p = 0.697). Consequently, parametric tests were employed in the analysis.

Table 2 Test for normality

Variable	Mean	Standard Deviation	Kolmogorov – Smirnov Test (D)	P
BDI	19.31	12.31	0.521	0.949 [NS]
ACSS	43.09	11.55	0.690	0.727 [NS]
PPES	45.20	9.61	0.709	0.697 [NS]
INQ total	3.97	0.35	0.602	0.862 [NS]
INQ burden	3.88	0.52	0.855	0.457 [NS]
INQ belong	4.15	0.37	1.243	0.091 [NS]
BSN	4.86	0.81	0.544	0.929 [NS]
UCLA	45.24	8.293	0.948	0.330 [NS]
RLi	4.91	1.04	1.252	0.087 [NS]

[NS] Not Significant

One way ANOVAs were used to compare the means of continuous demographic variables, such as age. Chi-square tests for independence were conducted to compare categorical variables such as ethnic background and gender between groups. To test the three overarching hypotheses a series of one-way ANOVAs were conducted to compare differences between the three groups (attempted suicide, suicidal ideation and control group) on the mean total scores from the measures illustrating the IPT variables including suicidal desire (i.e. thwarted belongingness and perceived burdensome) and acquired capability. Post hoc tests were used to detect significant differences between specific groups if the ANOVA was significant. All statistical analyses were based on a statistical significance level of $p<0.05$. To ensure variations in depression did not account for the hypothesised effects an analysis of covariance (ANCOVA) was used to control for the effects of depression based on the BDI.

RESULTS

Participants

Out of 554 people across the five EIS teams caseloads, 397 were excluded because they did not meet the screening criteria, 66 did not express an interest in the study, 36 declined and 7 were difficult to engage. The recruited sample consisted of 48 people with a diagnosis of FEP; three participants (6.25%) withdrew their consent during the assessment. Figure 4 shows the disposition of participants and their reason for exclusion. The number of participants included in the analysis was 45 (i.e. 28.66% of the total number of participants that were screened for this study). Reasons as to why 372 (67.15%) people were not appropriate for the study were unspecified by the care co-ordinators.

Characteristics and Demographics. Detailed patient demographics and characteristics are described in Table 3 and 4. A total of 45 people diagnosed with a FEP participated in the research and had experienced their first psychotic experience on average 3.49 years ago (range= 9 months-16 years). The majority were male (89%), White-British (40%), single (86.7%), heterosexual (97.8%), unemployed (53.3%) and the average age was 24.96 years (SD= 4.695).

Friends and family n=36 (80%) were reported by the majority of participants as the main type of support when taking care of their mental health. Significant group differences were found for friends, family and other (priest and medication) as types of support when looking after their mental health.

Table 3: Demographics characteristics of study sample (N=45)

	Total Sample ***N*** = 45 **(%)**	***Suicide attempt group*** ***n*** = 15 **(%)**	***Suicide ideation group*** ***n*** = 15 **(%)**	***Control group*** ***n*** = 15 **(%)**	***P value***
Gender					
Female	5 (11.1)	2 (13.3)	2 (13.3)	1 (6.7)	$x^2 = 0.450$, p = 0.799
Male	40 (88.9)	13 (86.7)	13 (86.7)	14 (93.3)	
Mean age (SD)	24.96 (4.695)	24.8 (5.12)	25.47 (4.6)	24.60 (4.63)	F = 0.135, p = 0.874
Ethnicity					$x^2 = 28.13$, p = 0.171
White	**20 (44.44)**	**9 (60)**	**3 (20)**	**7 (46.7)**	
British	18 (40)	9 (60)	2 (13.3)	7 (46.7)	
Irish	1 (2.2)	-	1 (6.7)	-	
Polish	1 (2.2)	-	1 (6.7)	-	
Mixed	**7 (15.56)**	**2 (13.3)**	**3 (20)**	**2 (13.3)**	
White & Black Caribbean	4 (8.9)	2 (13.3)	2 (13.3)	-	
White & Asian	2 (4.4)	-	1 (6.7)	1 (6.7)	
Any other mixed background	1 (2.2)	-	-	1 (6.7)	
Asian/Asian British	**9 (20)**	**1 (6.7)**	**5 (33.3)**	**3 (20)**	
Indian	2 (4.4)	-	1 (6.7)	1 (6.7)	
Pakistan	6 (13.3)	-	4 (26.7)	2 (13.3)	
Afghanistan	1 (2.2)	1 (6.7)	-	-	
Black/Black British	**9 (20)**	**3 (20)**	**3 (20)**	**3 (20)**	
Caribbean	5 (11.1)	2 (13.3)	3 (20)	-	
African	2 (4.4)	-	-	2 (13.3)	
Somalia	1 (2.2)	-	-	1 (6.7)	
Any other Black background	1 (2.2)	1 (6.7)	-	-	

Table 4: Characteristics of study sample (N=45)

	Total Sample ***N*** = 45 **(%)**	***Suicide attempt group*** ***n*** = 15 **(%)**	***Suicide ideation group n*** = 15 **(%)**	***Control group*** ***n*** = 15 **(%)**	***P value***
First psychotic experience mean years ago (SD)	3.49 ±2.659 years	3.79 ±3.985 years	3.57 ±1.771 years	3.10 ±1.716 years	F = 0.258, p = 0.774
Beck depression inventory BDI-II					F = 8.175, p = 0.001
Total score	19.31±12.305	22.13±12.49	25.40±10.947	10.40±8.166	
Level of depression					
Minimal depression	17(37.78)	4(28.57)	1(6.66)	12(80)	
Mild depression	5 (11.11)	2(13.3)	2(13.3)	1(6.66)	
Moderate depression	13(28.89)	4(28.57)	7(46.66)	2(13.3)	
Severe depression	10(22.22)	5(33.33)	5(33.33)	0(0)	
Relationship Status					x^2 = 4.00, p = 0.406
Single	39 (86.7)	13 (86.7)	13 (86.7)	13 (86.7)	
Significant other	3 (6.7)	1 (6.7)	2(13.3)	-	
Married	3 (6.7)	1 (6.7)	-	2 (13.3)	
Sexuality					x^2 = 2.05, p = 0.360
Heterosexual	44 (97.8)	14 (93.3)	15 (100)	15 (100)	
Bisexual	1 (2.2)	1 (6.7)	-	-	
Religion					x^2 = 12.90, p = 0.229
No religion	17 (37.8)	6 (40)	8 (53.3)	3 (20)	
Hindu	1 (2.2)	-	1 (6.7)	-	
Christian	12 (26.7)	3 (20)	2 (13.3)	7 (46.7)	
Muslim	9 (20)	2 (13.3)	3 (20)	4 (26.7)	
Catholic	4 (8.9)	3 (20)	-	1 (6.7)	
Jehovah's Witness	1 (2.2)	1 (6.7)	-	-	
Paganism	1 (2.2)	-	1 (6.7)	-	
Work Status					x^2 = 11.59, p = 0.170
Working full time	1 (2.2)	-	1 (6.7)	-	
Working part time	3 (6.7)	-	1 (6.7)	2 (13.3)	
Unemployed	24 (53.3)	7 (46.7)	8 (53.3)	9 (60)	

Student	7 (15.6)	1 (6.7)	3 (20)	3 (20)	
Unable to work	10 (22.2)	7 (46.7)	2 (13.3)	1 (6.7)	
Education level					$x^2 = 16.33$, $p = 0.294$
Less than secondary school	3 (6.7)	1 (6.7)	1 (6.7)	1 (6.7)	
Some secondary school	3 (6.7)	2 (13.3)	-	1 (6.7)	
Secondary school GSCEs	11 (24.4)	3 (20)	4 (26.7)	4 (26.7)	
Some college	10 (22.2)	4 (26.7)	1 (6.7)	5 (33.3)	
Vocational certificate program	5 (11.1)	3 (20)	2 (13.3)	-	
College	8 (17.8)	1 (6.7)	6 (40)	1 (6.7)	
University degree	4 (8.9)	1 (6.7)	1 (6.7)	2 (13.3)	
Other	1 (2.2)	-	-	1 (6.7)	
Support for Mental Health*					
Friends and family	36 (80)	11 (73.3)	15 (100)	10 (66.7)	$x^2 = 5.83$, $p = 0.054$
Healthcare professionals	33 (73.3)	13 (86.7)	12 (80)	8 (53.3)	$x^2 = 4.77$, $p = 0.092$
Activities	18 (40)	3 (20)	7 (46.7)	8 (53.3)	$x^2 = 3.89$, $p = 0.143$
Other Support:					$x^2 = 5.05$, $p = 0.538$
Priest	1 (2.2)	-	-	1 (6.7)	
Medication	2 (4.4)	1 (6.7)	1 (6.7)	-	

* More than one option could be chosen.

At the time of the study the total sample on average were experiencing moderate levels of depression (M=19.31, SD=12.30). Differences between the three groups were found to be significant [attempt, M=22.13, SD=12.49, ideation, M=25.40, SD=10.947, control, M=10.40, SD=8.166; F(2,44)=8.175, p=0.001]. Levels of depression were also explored in relation to suicidal desire (i.e. a combination of thwarted belongingness and perceived burdensomeness) and acquired capability variables. Significant results ($p \geq 0.053$) were found on the scores for the RLI-RF, BNS, UCLA, ACSS and PPES (Table 5) when compared between the different levels of depression (minimal, mild, moderate and severe). This suggested that those in the total sample reporting levels of severe depression experienced a lower sense of basic needs satisfaction, responsibility to their family and higher levels of loneliness and acquired capability compared to those with lower levels of depression.

Table 5: Comparison of depression groupings generated by the Beck Depression Inventory-II and the suicidal desire (i.e. a combination of thwarted belongingness and perceived burdensomeness) and acquired capability variables amongst young people with FEP (N=45)

Variables	Total Sample (N=45)	Levels of depression				P
		Minimal (N=17)	Mild (N=5)	Moderate (N=13)	Severe (N=10)	
Suicidal Desire						
INQ total	3.97(0.476)	3.98(0.349)	3.792(0.413)	3.98(0.36)	4.04(0.3438)	F = 0.530, p=0.664
INQ burden	3.88(0.525)	3.82(0.476)	3.45(0.641)	4.01(0.499)	4.00(0.530)	F = 1.698, p =0.182
INQ belong	4.15(0.373)	4.23(0.380)	4.00(0.176)	4.06(0.410)	4.22(0.381)	F = 0.891, p=0.454
RLI-RF	4.91(1.043)	5.28(0.594)	5.29(0.714)	5.09(0.963)	3.89(1.230)	F = 5.589, p=0.003*
BNS	4.87(0.813)	5.31(0.6772)	4.80(0.478)	4.82(0.846)	4.233(0.739)	F = 4.610, p=0.007*
UCLA	45.24(8.293)	41.29(8.01)	44.80(7.530)	47.15(7.658)	49.70(7.704)	F=2.784, p=0.053*
Acquired Capability						
ACSS	43.09(11.55)	43.35(11.01)	44.60(9.072)	40.92(14.08)	44.70(11.196)	F = 3.985, p =0.014*
PPES	45.20(9.62)	40.88(8.78)	47.80(4.97)	51.69(10.20)	42.80(7.69)	F = 4.198, p = 0.011*

*p<0.05

Illicit drug use. For the purpose of this study current use of an illicit drug was defined as use of the drug in the last 30 days. Thirty-nine participants (86.67%) had used drugs/alcohol at some point in their life, the majority having used alcohol (n=39), followed by cannabis (n=32). The '*ever use'* by the participants of individual illicit drugs is illustrated in Figure 5. There were no statistical differences between the three groups (attempt, ideation, control) except for heroin (attempt M=1.73, SD=0.458, ideation, M= 1.93, SD= 0.258, control, M=2.00, SD=0.00; x^2=5.85, p=0.054), amphetamine (attempt M=1.80, SD=0.414, ideation, M=2.00, SD=0.00, control, M=2.00, SD=0.00; x^2=6.43, p=0.040), and legal highs (attempt, M=1.80, SD=0.414 , ideation, M=2.00, SD = 0.00, control , M=2.00, SD=0.00; x^2= 6.43, p=0.040).

Of the total sample, 77.78% (n=35) had used one or more illicit drugs in the past 30 days. Thirty participants (66.67%) reported alcohol use in the last 30 days and most frequently reported by the controls (n=11). Participants reported using mainly cannabis (22.2%). There was no statistical difference between the three groups (attempt, ideation, control) for alcohol or drug use in the last 30 days (Table 7). Independent-samples t-test were further conducted to compare drug and alcohol use in the last 30 days with the scores on the suicidal desire (i.e. a combination of thwarted belongingness and perceived burdensomeness) variables (INQ, RLI-RF, BNS, UCLA) and acquired capability variables (ACSS, PPES) (Table 7). No significant differences were found ($p \geq 0.070$) between those who had and had not used substances within the previous 30 days.

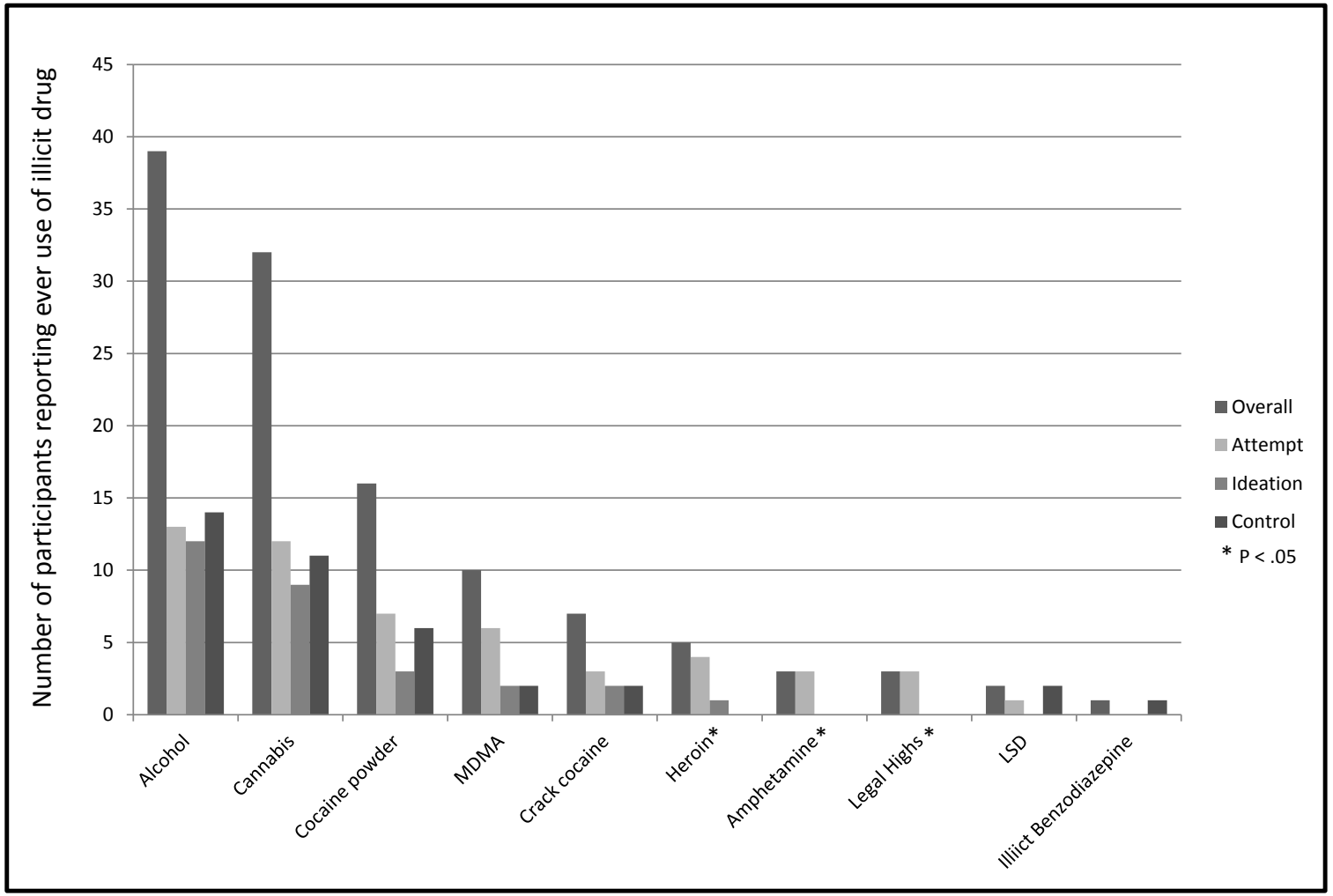


Figure 5: Participants' report of ever use of illicit drug

Table 6: Illicit drug use: Illustrating differences between the groups

	Total	**Attempt**	**Ideation**	**Control**	**P**
Used in the last 30 days	*N(%)*	*n(%)*	*n(%)*	*n(%)*	
Alcohol	*30(65.2)*	*10(66.7)*	*9(60)*	*11(73.33)*	$x^2 = 17.2$, p = 0.509
Drugs*	*12 (26.7)*	*5(33.3)*	*2(13.33)*	*5(33.3)*	$x^2 = 2.05$, p = 0.360
Cannabis	*10(22.2)*	*6(40)*	*2(13.33)*	*2(13.33)*	$x^2 = 4.11$, p = 0.128
Cocaine powder	*4(8.89)*	*1(6.7)*	*0(0)*	*3(20)*	$x^2 = 3.84$, p = 0.146
Crack cocaine	*1(2.22)*	*1(6.7)*	*0(0)*	*0(0)*	$x^2 = 2.05$, p = 0.360
MDMA	*1(2.22)*	*1(6.7)*	*0(0)*	*0(0)*	$x^2 = 4.91$, p = 0.296
Mean days used in the last 30 days	Mean(SD)	Mean(SD)	Mean(SD)	Mean(SD)	
Alcohol	*2.80(4.58)*	*1.73(2.25)*	*3.80(5.85)*	*2.87(4.92)*	*F = 0.759, p = 0.474*
Drugs*	*3.0(7.37)*	*1.47(2.70)*	*2.13(7.73)*	*5.40(9.72)*	*F = 1.236, p = 0.301*
Cannabis	*3.31 (8.27)*	*0.733(2.15)*	*4.0(10.56)*	*5.20(9.35)*	*F = 1.547, p = 0.225*
Cocaine powder	*0.267(0.94)*	*0.6(1.40)*	*0(0)*	*0.20(0.77)*	*F = 1.63, p = 0.207*
Crack cocaine	*0.022(0.15)*	*0.07 (0.258)*	*0(0)*	*0(0)*	*F = 1.00, p = 0.376*
MDMA	*0.02(0.15)*	*0.07(0.258)*	*0(0)*	*0(0)*	*F = 1.00, p=0.376*
Typical amount taken in the last 30 days	Mean(SD)	Mean(SD)	Mean(SD)	Mean(SD)	
Alcohol *(units)*	*10.83(40.82)*	*23.46(70.27)*	*3.94(3.86)*	*5.08(5.09)*	*F = 1.09, p = 0.347*
Drugs* (£)	*32.30(98.66)*	*16.80(39.159)*	*48.0(155.80)*	*31.80(65.27)*	*F = 0.364, p = 0.697*
Cannabis (£)	*26.87(96.87)*	*1.47(4.31)*	*48.0(155.8)*	*31.13(63.34)*	*F = 0.957, p = 0.393*
Crack cocaine (£)	*3.33(22.36)*	*10.0(38.73)*	*0(0)*	*0(0)*	*F = 1.00, p = 0.376*
Cocaine powder (£)	*1.67(6.74)*	*4.33(11.16)*	*0(0)*	*0.67(2.58)*	*F = 1.87, p = 0.167*
MDMA (£)	*0.33(2.27)*	*1.00(3.87)*	*0(0)*	*0(0)*	*F = 1.00, p = 0.376*

* Participants could report use of more than one illicit drug

Table 7: T-Test results comparing substance use (alcohol and illicit drugs) in the last 30 days with the IPT variables (i.e. suicidal desire and acquired capability) for the total sample (N=45)

Variable	Alcohol use in the last 30 days			Illicit drug use in the last 30 days		
	Yes (N = 30, 65.2%)	**No (N = 15, 33.33%)**	**P**	**Yes (N=12, 26.7%)**	**No (N=33, 73.3%)**	**p**
Suicidal Desire	M(SD)	M(SD)		M(SD)	M(SD)	
INQ total	3.903(0.319)	4.104(0.387)	t = -1.857 , p =0.070	3.8367 (0.394)	4.018 (0.3291)	t = -1.553, p=0.128
INQ burden	3.788(0.5355)	4.050(0.4198)	t = -1.610, p=0.115	3.7396(0.575)	3.924(0.506)	t = -1.045, p=0.302
INQ belong	4.089(0.4068)	4.282(0.2618)	t = -1.664, p = 0.103	4.148(0.448)	4.155(0.350)	t = -0.053, p = 0.958
RLI-RF	5.01(0.991)	4.71(1.150)	t = 0.907, p = 0.369	5.07(0.989)	4.86 (1.071)	t =0.605, p=0.548
BNS	4.856(0.842)	4.898(0.779)	t = -0.165, p = 0.870	5.0913 (0.778)	4.7893(0.822)	t =1.104, p=0.276
UCLA	44.87(8.889)	46.00(7.181)	t = -0.428, p = 0.671	43.58 (8.14)	45.85 (8.389)	t =-0.807, p=0.424
Acquired Capability	M(SD)	M(SD)			M(SD)	
ACSS	43.93(11.179)	41.40(12.495)	t = 0.689, p = 0.494	42.58 (13.215)	43.27 (11.108)	t = -0.175, p=0.862
PPES	45.27(9.836)	45.07(9.498)	t = 0.065, p =0.948	49.50 (10.732)	43.64 (8.838)	t = 1.859, p = 0.070

Suicidal Behaviour. Out of the total sample of 45 people with a FEP, 31% reported actual attempted suicide ever in their life, 29% interrupted suicide attempt and 24% aborted or self-interrupted suicide attempted. Self-injurious behaviour without suicide intent was reported by 24% of respondents (see Table 8). Those who reported attempted suicide (n=14) had attempted on average 3.14 times (SD=2.627) ranging between one and 10 times. Overall, the suicide attempts group had attempted suicide a total of 44 times.

Poisoning (n=22) was the most frequently reported method of a suicide attempt (Table 9). The majority of those who had attempted suicide reported that they had moderate or moderately severe physical damage (13.33%, n=6).

Upon discussions about their suicidal behaviour at the time of their attempt (see Table 10), 50% (n=7) of those who had attempted reported that it had been related to a psychotic episode they were experiencing at the time.

Table 8: Prevalence of suicide and suicidal ideation among the sample of people with a First Episode of Psychosis (N=45)

Variable*	Total n(%)	Attempt n(%)	Ideation n(%)	Control n(%)	P
Suicide and self-injurious behaviours (C-SSRS)					
Actual suicidal attempt	14 (31.11)	14 (31.11)	0 (0)	0 (0)	x^2=40.65, p= 0.00
Interrupted attempt	13 (28.89)	6 (13.33)	6(13.33)	1(2.22)	x^2=5.41, p= 0.067
Aborted or self-interrupted attempt	11(24.44)	7 (15.55)	3 (6.67)	1(2.22)	x^2=6.738, p= 0.034
Other preparatory acts to kill self	0 (0)	0 (0)	0 (0)	0 (0)	NA
Self-injurious behaviour without suicide intent	11(24.44)	7(15.55)	3(6.67)	1(2.22)	x^2=6.738, p= 0.034
Suicide Ideation (C-SSRS)					
Wish to be dead	30(66.67)	14(31.11)	15(33.33)	1(2.22)	x^2=36.6, p= 0.00
Suicidal thoughts	11(24.44)	6(13.33)	5(11.11)	0 (0)	x^2=7.46, p= 0.024
Suicidal thoughts with method but without specific plan or intent to act	7(15.55)	3(6.67)	4(8.89)	0 (0)	x^2=4.40, p= 0.111
Suicidal intent (without specific plan)	2(4.44)	1(2.22)	1(2.22)	0 (0)	x^2=1.047, p = 0.59
Suicidal intent (with specific plan)	0 (0)	0 (0)	0 (0)	0 (0)	n/a
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	
Ideation Severity Score (C-SSRS)	1.11(1.13)	1.60(1.06)	1.67(1.05)	0.07(0.258)	F= 16.20, p= 0.000
Ideation Intensity Score (C-SSRS)	11.04(8.65)	16.80(6.69)	15(3.21)	1.33(5.16)	F= 39.41, p= 0.000
Suicidal Behavioural Score (C-SSRS)	0.4(0.95)	1.80(0.86)	0.60(0.63)	0.13(0.35)	F= 15.75, p = 0.000

*Presence of past and current suicidal ideation and suicidal behaviour Current suicidality is asked in the past 6 months for suicidal **p<0.05

Table 9: Methods of Suicide Attempts

Method	Amount of attempts made using this method*
Poisoning (i.e. drug overdose, drinking bleach)	22
Hanging or suffocation	13
Cutting or piercing (i.e. cutting arms, slitting wrists, stabbing stomach)	6
Other method (i.e. eating glass, pouring bleach over their head)	2
Did not disclose	1
Total	44

*Participants could report more than one method.

Table 10: Qualitative data

Reasons for suicide attempt	Qualitative Data
Related to psychosis (n=7)	*'[I] wished not to wake up and heard voices'* *'During a psychotic episode I believed there was a conspiracy that people were going to kill me so I wanted to kill myself before they did so'* *'When I was ill, I wanted to be dead, I was angry'* *'I was influenced by psychosis and was disturbed, I felt I had nothing to live for and wanted to be saved from the situation.'* *'I was unwell and it [suicide attempt] was related to psychosis'* *'[I attempted suicide] when I had psychotic episode'* *'I felt like I was possessed by spirits and didn't want to live anymore'*
Feeling useless (n=3)	*'I'm in hell now, I'm useless, I hate living and want to be at peace'* *'Thought the world was better without me, wanted to go to sleep and never wake up…I'm useless and worthless, everyone would be happier without me'* *'Felt useless out of control and weak, couldn't concentrate or do anything people were giving me medication and I couldn't do anything for myself'*
Difficulty coping (n=2)	*'I don't want to be here anymore life too stressful'* *'[Don't want to] have to cope with seeing/speaking to people/having to wake up'*
Low mood (n=1)	*'I'm fed up of everything most days'*
Perceive that the world is better without them (n=1)	*'The world would be better place without me, I don't deserve to be here'*

Interrupted attempts (Mean amount of interruptions=1.923, range=1-7) were reported in all groups, particularly amongst ideators (n=6) and attempters (n=6). Interruptions had included their parents, partner, a security guard, the police, supernatural experiences, hearing voices. Aborted attempts were also reported across the three groups, particularly in the attempt group (n=7). All of which had been aborted because they had changed their minds (e.g. '*decided not to'*, '*not worth it'*). Eleven participants reported self-harming behaviour, many of which who cut their arms (n=7). The C-SSRS scores for ideation severity, intensity and suicidal behaviour were significantly different between groups indicating validity of the three different groups.

Suicidal Ideation. Thirty participants (67%) reported previous suicidal ideation with 20% (n=9) experiencing these thoughts many times each day and lasted less than one hour (Table 6). The most commonly endorsed reason for suicidal ideation was to completely (40%) end or stop the distress they were experiencing, they could not go on living with the way they were feeling and did not attempt to control these thoughts when they emerged (37.8%).

Hypothesis 1: Young People with Psychosis who have No History of Suicidality have No Desire or Capability to Attempt Suicide

It had been hypothesised that people with a FEP who had not previously attempted suicide or suicidal ideation would have lower scores for suicidal desire (i.e. a combination of thwarted belongingness and perceived burdensomeness) and capability compared to the other two groups. However, no significant differences were found (Table 11). More specifically, no significant differences were found on the INQ mean total scores ($F(2,42) = 0.02$, $p = 0.980$), the INQ burdensomeness subscale ($F(2,42) = 0.408$, $p = 0.667$), INQ belongingness subscale, ($F(2,42 = 0.150$, $p = 0.862$), RLI-RF ($F(2,42) = 2.505$, $p = 0.94$) and the UCLA loneliness score ($F(2,42) = 0.468$, $p = 0.630$). Upon closer examination of the mean scores for suicidal desire (i.e. a combination of thwarted belongingness and perceived burdensomeness), scores were extremely similar compared to attempt and ideation groups for the INQ total ($M = 3.95$; $SD = 0.257$) and subscale scores, RLI-RF ($M = 5.35$, $SD = 0.62$) and BNS ($M = 5.20$, $SD = 0.85$). This indicated a high sense of basic need satisfaction, a strong responsibility to their family, and felt '*somewhat'* of a burden or sense of thwarted belongingness. Scores were slightly lower in the control group for the UCLA Loneliness Scale ($M = 43.53$, $SD = 8.67$). However this still indicated a high level of loneliness.

No significant differences were found between the mean scores on the measures to assess acquired capability including ACSS ($F(2,42) = 0.149$, $p = .826$) and the PPES ($F(2,42) = 2.074$, $p = 0.138$). Mean scores indicated that the control group scored lower in the PPES compared to the other groups suggesting slightly less experiences of painful and provocative life events, yet still relatively high. They also scored similar mean scores to the other groups for the ACSS but

marginally lower than the attempter group, suggesting levels of acquired ability for lethal self-injury is similar to that of the ideator group but less than the attempter group. Control groups significantly experienced minimal levels of depression on the BDI-II compared to ideators and attempter groups [control, M=10.40, S =8.166, ideation, M=25.4, SD= 10.947 and attempt, M=22.13, SD= 12.49; F(2,44)= 8.175, p= 0.001]. However, after controlling for the effects of depression on the measures to assess suicidal desire (i.e. a combination of thwarted belongingness and perceived burdensomeness) and acquired capability results remained not significant. Consequently, hypothesis 1 was rejected.

Table 11: Descriptive statistics of measures explicitly designed to assess the suicidal desire and acquired capability component of the interpersonal-psychological theory of suicide by group

Variable	Total	Attempt	Ideator	Control	P value	ANCOVA adjusted for depression	Eta Squared	Observed Power
Suicidal Desire								
Perceived Burdensomeness								
INQ - burden items	3.88(0.525)	3.78(0.59)	3.88(0.54)	3.96(0.46)	F= 0.408, p= 0.667	F= 1.130, p = 0.333	0.052	0.235
RLI-RF	4.91(1.04)	4.86(0.99)	4.53(1.299)	5.35(0.620)	F= 2.51, p = 0.094	F=0.249 , p = 0.781	0.012	0.086
Thwarted Belongingness								
INQ-belong	4.15(0.373)	4.11(0.339)	4.163(0.346)	4.185(0.448)	F= 0.150, p = 0.862	F=0.153 , p = 0.859	0.007	0.072
BNS	4.87 (0.813)	4.78 (0.924)	4.63 (0.565)	5.203(0.845)	F= 2.13, p = 0.131	F= 0.011, p = 0.989	0.001	0.052
UCLA Loneliness Scale	45.24(8.29)	46.07(8.730)	46.13(7.754)	43.53(8.67)	F= 0.468, p = 0.630	F= 0.578, p = 0.565	0.027	0.139
INQ total	3.97(0.352)	3.98(0.428)	3.98(0.375)	3.95(0.257)	F= 0.20, p = 0.980	F=.007 , p = 0.993	0.00	0.051
Acquired Capability								
ACSS	43.09 (11.5)	44.33 (12.47)	42 (10.97)	42.93(11.85)	F= 0.149, p = 0.862	F= 0.146, p = 0.865	0.007	0.071
PPES	45.20(9.62)	48.27(10.70)	45.93(8.10)	41.40(9.19)	F= 2.074, p = 0.138	F= 1.419, p = 0.254	0.065	0.287
Covariate Measure								
BDI total score	19.31(12.305)	22.13(12.49)	25.40(10.947	10.40(8.166)	F= 8.175, p = 0.001	N/A	N/A	N/A

Hypothesis 2: Young people with psychosis who have experienced suicidal ideation have the suicidal desire but not the capability to attempt suicide

It had been hypothesised that people with a FEP who had no history of attempted suicide, yet thought about suicide would have higher scores for the suicidal desire (i.e. a combination of thwarted belongingness and perceived burdensomeness) variables but lower scores for capability variables compared to the control. No significant differences were found on the suicidal desire variables between the three groups including the INQ mean total scores (F (2,42 = 0.02, p = 0.980), the INQ burdensomeness subscore (F (2,42) =0.408, p=0.667), INQ belong subscore, (F (2,42)= 0.150, p= 0.862), RLI-RF (F(2,42)= 2.505, p= 0.94) and the UCLA loneliness score (F (2,42)=0.468, p= 0.630). These results indicate that those with suicidal ideation experience a high sense of burden and thwarted belongingness. Furthermore, there were no significant differences found between the mean scores between the three groups for acquired capability [ACSS: F(2,42) = 0.149, =0.826, PPES: F (2,42)= 2.074, p=0.138]. These results illustrate that those with ideation have experienced a high number of painful and provocative events and a high level of acquired capability. After controlling for depression, results remained non significant (Table 11). Therefore, hypothesis 2 was rejected.

Hypothesis 3: Young people with psychosis who have a history of attempted suicide have the suicidal desire and capability to attempt suicide.

It had been hypothesised that people with a FEP who had previously attempted suicide would have high scores for the suicidal desire variables and acquired capability variables. No significant differences were found compared to the ideation or control group (Table 11), including the INQ mean total scores (F (2,42 = 0.02, p = 0.980), the INQ burdensomeness subscore (F (2,42) = .408, p = .667), INQ belong subscore, (F (2,42 = 0.150, p = 0.862), RLI-RF (F(2,42) = 2.505, p = 0.94) and the UCLA loneliness score (F (2,42) = 0.468, p = 0.630).

Results indicated that people who had previously attempted suicide had high levels of thwarted belongingness and perceived burdensomeness. No significant differences were found between the mean scores between the three groups on the acquired capability variables ACSS ($F(2,42) = 0.149$, $p = .826$) and the PPES ($F(2,42) = 2.074$, $p = 0.138$). This indicated that those who have previously attempted suicide have experienced numerous painful and provocative events and a high level of acquired capability. Scores were slightly higher than those in the other two groups. After adjusting for BDI scores, there was no significant difference between the three groups on scores. Consequently, hypothesis 3 was rejected. [1]

[1]See Appendix 20 for supplementary data that compares the current study's results to a military sample (Bryan, et al. 2010), an undergraduate sample (Van Orden et al., 2008) and a sample of people with depression (Smith et al., 2010)

DISCUSSION

Main Findings

This study investigated the concepts of 'suicidal desire' (i.e. a combination of thwarted belongingness and perceived burdensomeness) and 'acquired capability' within the Interpersonal Theory of Suicide, using self-report measures amongst young people with a first episode of psychosis. The sample profile was similar across the three groups (attempt, ideation and control) and in line with previous research (McGorry, Henry, & Power 1998; Hor & Taylor, 2010). They were single, White-British unemployed, college-educated, 25 year old males in the first three years after onset of a first episode of psychosis. The majority had used illicit substances 30 days prior to the study. The sample experienced moderate levels of depression at the time of the study (except for the control group whose depression levels were minimal). Most reported an affiliation to a religious group. The 15 participants who reported a previous suicide attempt had done so on average three times by means of self-poisoning and hanging. Of note was that all suicide attempts were made during a psychotic episode.

The findings demonstrated that young people with FEP perceive themselves to be a 'burden', do not feel that they belong and have developed a capability for suicide across all three groups regardless of suicide history. No significant differences were distinguished between the groups (attempt, ideation, control). However, the current findings are consistent with past research on the psychological mechanisms underpinning psychosis and suicide risk which may explain why the findings were not significant.

Suicidal Desire: Perceived Burdensomeness. Young people with FEP reported high levels of 'burden'. A perception that they are a burden on others could develop from the consequences of psychosis (e.g. negative beliefs, stigma, and shame) (Birchwood et al., 2000;

Tarrier et al., 2007; Rossler, Salize, van Os, & Riecher-Rossler, 2005). Subsequently, such negative beliefs can lead to entrapment, a precipitator to suicidal ideation (Taylor et al., 2010). Psychotic experiences, such as hearing voices, may also add to this burden if they consider the voice as powerful and themselves as dependent and weak (Birchwood et al., 2000). Furthermore, most of the sample were college-educated and unemployed. Studies have shown that intelligent individuals may have a greater understanding of the negative consequences of psychosis which may disrupt their previously high future expectations (Webb et al 2011) and could contribute to perceived burdensomeness (i.e. financial and emotional). An awareness of such consequences (i.e. insight) can increase suicide risk amongst people with psychosis (Melle & Barratt, 2012). On the contrary, participants reported social support provided by friends, family and healthcare professionals as the most helpful for their mental health and family responsibilities as an important factor against suicidality which may help to mitigate burden (De Hert et al., 2001; Gooding et al., 2013). Given that the diagnosis of psychosis itself is a burden may explain why all three groups reported high levels of burden regardless of suicidality.

Suicidal Desire: Thwarted Belongingness. The study cohort reported high levels of thwarted belongingness (i.e. social isolation, disconnection from others). Studies indicate that people with psychosis often withdraw from society and become socially isolated (Birchwood, 2003). This may be because of psychotic symptoms like social withdrawal (Fenton et al. 1997; Tarrier et al. 2007), the stigma of the diagnosis, and beliefs about social acceptance (Birchwood, 2003; Sharaf et al., 2013). This can lead to a phenomenon known as down-ranking (i.e. adopt the one-down position in a balanced relationship) (Gilbert, 1992). Those with limited social support may feel entrapped which could lead to suicidal ideation (Iqbal, et al., 2000; O'Connor et al. 2011; Taylor et al., 2010;). Furthermore, perhaps the misuse of

substances such as cannabis contributed to a sense of belonging as it may have normalised the unusual symptoms of psychosis to those induced by cannabis (Lambert et al. 2005). Subsequently, the social isolation and withdrawal experienced amongst people with psychosis may have contributed to the high scores across all three groups which would explain why there were no significant differences.

Suicidal Behaviour: Acquired Capability. Joiner (2005) suggests that the main component that translates suicide ideation to behaviour is that of an acquired ability to overcome a natural aversion to harming oneself during a suicidal act, developed from previous painful or distressing experiences. Findings demonstrated high levels of acquired capability across the three groups. One explanation for this may be because psychosis itself can be traumatic (Birchwood, 2003; Jackson et al. 2004) and can lead to PTSD (Morrison et al., 2003). These experiences may have further been elevated by the illicit substances they reported using which can contribute to multiple risk behaviours in psychosis (MacArthur et al. 2012). This could explain why there were no significant differences between groups since the experience of psychosis automatically increases their level of acquired capability.

According to Joiner (2005), the IPT could be used to identify those who attempted and those who do not. Since the results from the current study do not distinguish between the different groups of suicidality it could be suggested that the concepts of the interpersonal-psychological theory may resonate/mirror the psychological impact or experience of having psychosis as a young person. Therefore, there may be specific mechanisms amongst people with psychosis that distinguish between those who do and do not attempt suicides that are not captured in the IPT.

Strengths and Limitations

There are a number of limitations in this study which may have impacted upon the findings. Only 8.2% individuals on the EIS caseload participated in the study. A number of reasons may account for this low recruitment response rate: 1) the procedure for identifying appropriate participants was based on the judgement of the care co-ordinators and for a number of patients it was unclear as to why they were not appropriate for the study, 2) the voluntary nature of the study meant there were no direct incentives, 3) individuals with a first episode of psychosis may be reluctant at expressing their views and feelings. It is also possible that those who were very distressed by their experience of psychosis or at greater risk for suicide would not be deemed to have capacity to be involved in the study or would be reluctant to discuss their experiences.

The study did not reach the level of statistical power required, and therefore may not be representative or generalizable. Further research could refine this methodology by recruiting through other means and replicating the study in a larger sample.

The IPT suggests that the factors combine and operate ‘synergistically' (Berman, Jobes, & Silverman, 2006). The study was retrospective and looked at past not current suicidality. This may not have reflected the high risk state they were feeling and the influence of acute psychotic symptoms. Teasdale (1988) illustrates this through the “differential activation” hypothesis, which suggests that negative beliefs associated with low mood, remain dormant until low mood reoccurs and reactivates this cycle.

A further limitation to the study is the terminology used within Joiner’s IPT theory of suicide which suggests that suicidal ideation can be termed as ‘suicidal desire’, a combination of perceived burdensomeness and thwarted belongingness. This definition seems particularly

limited as it indicates that only two variables contribute to suicide ideation for individuals with psychosis. Subsequently the theory ignores the concepts of defeat, entrapment, ideation and desire in a way which may not be sufficiently sophisticated to detect changes in a population who already carry significant risk. As a result of Joiner's definition of suicidal desire, the items on the INQ reflect the concepts of thwarted belongingness and perceived burdensomeness. Interestingly, none of the items refer directly to 'suicidal desire' or ideation. Therefore the items on the INQ may not have accurately reflected the concept of 'suicidal desire'. This further highlights whether the definition of 'suicidal desire' is an accurate description and whether it is the same as suicidal ideation. Furthermore, this was the first time that the IPT measures were administered to individuals with psychosis. As these measures are American, some of the items were not particularly relevant for a UK population. For example, *'do you enjoy watching hockey games*?' and *'how many times have you been shot?*'. The validity of these measures with a UK population amongst people with psychosis should continue to be explored.

Given that Joiner developed both the IPT and the instruments used measure the IPT concepts, a strength of the study is that at least one other measure to examine the concepts of the IPT developed by a researcher unrelated to the IPT development. However, the disadvantage of this meant that a large number of questionnaires were used in the study which may have explained why the study did not reach the level of statistical power required.

Despite the limitations, the study provides the first empirical test of the IPT in the context of FEP and highlights the burden of psychosis, regardless of suicidal history.

Research and Clinical Implications

People with a FEP are at an elevated risk of suicide. Findings indicate that it would be important for mental health services to implement interventions which promote social opportunities and improve social recovery to increase a sense of belonging and hope (e.g. cognitive behaviour therapy for improving social recovery, Fowler et al., 2009; family interventions, Fadden, 2009). Factors such as substance abuse could also be an appropriate target for an intervention particularly because substance abuse is linked to poorer outcomes in FEP (i.e. increased psychotic symptoms, poor treatment compliance) (Archie, et al. 2007).

The results suggest that trait factors such as acquired capability cannot solely be relied upon when identifying those who are suicidal. Professionals should continue to be mindful of the transient states young people with psychosis go through and these are potentially greatly heightened during an acute psychotic episode which needs to be frequently monitored.

Future research could assess the IPT's concepts as moderating factors within the IMV framework amongst a psychosis population (O'Connor, 2011). Future research could examine how much or how many moderators are needed to determine whether an individual with psychosis will transition through the next stage of suicidality. Longitudinal research investigating change of mood over time may show variability in the scores. The duration of time between a suicide attempt, psychotic episode and the interview along with a comparison between those who have been diagnosed recently and those who have lived with it for a while would also be important to investigate. It is possible that different types of psychotic experiences might differentially contribute to suicidal desire and/or acquired capability and could therefore be examined further.

Unfortunately there were no comparative norms for some of the IPT measures that were administered. Although the face validity could be considered as relative to psychosis, future research could establish content validity and identify what constitutes a minimal importance different score in a FEP population (i.e. by using distributional and anchor-based methods) (U.S. Department of Health and Human Services Food and Drug Administration, 2009).

CONCLUSIONS

This study indicates that young people with FEP experience thwarted belongingness, perceived burdensomeness and have acquired capability regardless of history of suicidality. Currently, the IPT model cannot identify cross-sectionally those who are most likely to attempt suicide in a psychosis population. It could be suggested that the concepts of the IPT resonate the experience of having psychosis as a young person. This is the first study to have examined the IPT in this context and indicates strategies healthcare professionals could implement as part of a prevention strategy.

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Van Orden, K.A. (2009) Construct Validity of the Interpersonal Needs Questionnaire. Electronic Theses, Treatises and Dissertations. Paper 4562. Retrieved January 2013, from http://diginole.lib.fsu.edu/etd/4562

Van Orden, K.A., Witte, T.K., Cukrowicz, K.C., Braithwaite, S.R., Selby, E.A., & Joiner, T.E. (2010). The Interpersonal Theory of Suicide. *Psychological Review, 117,* 575-600.

Van Orden, K.A., Witte, T.K., Gordon, K.H., Bender, T.W. & Joiner, T.E. (2008). Suicidal desire and the capability for suicide: Tests of the interpersonal-psychological theory of suicidal behaviour among adults. *Journal of Consulting and Clinical Psychology, 76(1),* 72-83.

Webb, R.T., Langstrom, N., Runeson, B., Lichtenstein, P. & Fazel, S. (2011). Violent offending and IQ level as predictors of suicide in schizophrenia: national cohort study. *Schizophrenia Research, 130(1-3),* 143-7.

Wenzel, A. & Beck, A.T. (2008). A cognitive model of suicidal behavior: theory and treatment. *Applied and Preventative Psychology, 12,* 189-201.

Williams, J.M.G. (1997). *Cry of pain.* London: Penguin.

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CHAPTER 3: PUBLIC DISSEMINATION PAPER

Identifying the moderating factors that influence the transition between suicidal ideation and behaviour amongst young people with a first episode of psychosis

PUBLIC DISSEMINATION PAPER

Outline

The work presented in Volume I of the thesis represents research undertaken by Rebecca Heelis during the completion of the Doctorate in Clinical Psychology at the University of Birmingham. It was completed under the supervision of Dr Chris Jackson and Dr Hermine Graham. It is comprised of two components: a review of the literature regarding factors that protect against risk of suicidality in people with psychosis and an empirical paper that applies the interpersonal-psychological theory of suicidal behaviour to a first episode psychosis population.

Suicide is a global leading cause of death with approximately one million people per year ending their life by suicide. Rates of suicide amongst young people with a first episode of psychosis are significantly higher than those of the general population. Several theoretical models of suicide have emerged over the last 30 years to understand and explain suicidality. Generally models of suicidality focus on aspects of suicidality common to a range of disorders and can be applied universally. The most recent model is the Integrated Motivational Volitional (IMV) model of suicidal behaviour which was developed based on major components from previous models including the Interpersonal-Psychological Theory of suicidal behaviours. Moderating factors play a crucial role within models of suicidality as they serve to increase or decrease the risk of suicide outcomes (O'Connor, 2011). A literature review and research study were conducted to identify and explore the factors that are important for understanding why people think about, attempt and are successful at killing themselves in a psychosis population.

Literature Review

The aim of the literature review was to identify the factors that reduce the risk or protect against suicidality specific to people experiencing psychosis. The paper reviews 26 articles published between 1984 and 2014 and uses the Integrated Motivational Volitional model of suicidal behaviour as a framework to structure the review. Positive self-appraisals, social support, daily activities, coping, negative symptoms of psychosis, and low IQ were found to protect against suicide amongst people with psychosis. Positive self-appraisals was the only moderating factor that provided partial support for the Integrated Motivational Volitional model. The review highlighted that additional factors, unique to people with psychosis, may need to be incorporated into the Integrated Motivational Volitional model. Clarification of the direction and strength of protective and moderating factors may further enable researchers and clinicians to improve prevention strategies and interventions of suicide risk.

Empirical Paper

Background. The interpersonal-psychological theory of suicidal behaviour (Joiner, 2005) suggests that an individual who does not feel they belong and believes they are a burden, combined with the capability to attempt suicide will make a suicide attempt. This theory has also been replicated within part of the IMV model as it is currently the only theory which explains the distinction between why some people think about, attempt and are successful at killing themselves. The current study aimed to investigate this theory's hypotheses in the context of psychosis.

Methods. Young people with a first episode of psychosis who considered suicide (n=15), had attempted suicide (n=15) or neither (n=15) were compared on self-report measures of suicidal desire (Interpersonal Needs Questionnaire, Responsibility to Family subscale of the Reasons for Living Inventory, Revised UCLA Loneliness and Basic Need Satisfaction in Life Scale) and acquired capability for suicide measured by the Acquired Capability for Suicide Scale and Painful and Provocative Life Events Scale.

Results. Overall, the sample profile was similar to previous research (Hor & Taylor, 2010). They were single, White-British, unemployed, college-educated, 25 year old, males, in the first three years after onset of a first episode of psychosis. The majority had used illicit substances 30 days prior to the study and were moderately depressed. Of the 15 participants who reported a suicide attempt had done so on average three times by self-poisoning and hanging and attempted during a psychotic episode. All participants perceived themselves to be a burden, did not feel that they belonged and had the capability for suicide regardless of suicidality. No significant group differences between groups were found.

Conclusions. Results indicated that the concepts of the interpersonal-psychological theory reflect the experience of psychosis regardless of suicidality (i.e. high levels of thwarted belongingness, perceived burdensomeness and acquired capability). Hence this theory is unable to distinguish between those who think about suicide and those who attempt. Findings indicate that it would be important for healthcare professionals to implement interventions which promote social opportunities and improve social recovery to increase as sense of belonging and decrease burden. Future research could assess specific features of psychosis (i.e. type of psychotic episode) and their influence on the suicidality.

APPENDICES

APPENDIX 1:

Search Strategy

Appendix 1 Search Strategy

	Database	Search Term	Results
1	PsycINFO, EMBASE, MEDLINE	("first episode psychosis" or psychosis or psychoses or psychotic or schizophreni* or "schizotypal disorder*" or "delusional disorder*" or "schizoaffective disorder*" or "early psychosis" or "recent onset schizophrenia" or "recent onset psychosis" or "first episode schizophrenia" or "early schizophrenia").mp. [mp=ti, ab, sh, hw, tn, ot, dm, mf, dv, kw, nm, kf, px, rx, an, ui, tc, id, tm]	399464
2	PsycINFO, EMBASE, MEDLINE	(suicid* or parasuicid*).mp. [mp=ti, ab, sh, hw, tn, ot, dm, mf, dv, kw, nm, kf, px, rx, an, ui, tc, id, tm]	142,629
3	PsycINFO, EMBASE, MEDLINE	(protect* or buffer* or moderat* or mediat* or modulat* or resilien* or recover* or prevent* or attenuat* or interact* or "social problem solv*" or "problem solv*or coping" or cope* or "memory bias*" or "cognitive bias" or "cognitive processes" or ruminat* or belong* or burden* or "future thought*" or "social support" or attitude* or capability or capable or impuls* or implementation or intention* or "access to mean*" or imitation or "social learn*" or "attribution*" or adaptability or personality or "emotional intelligen*" or "cognitive process bias*" or "self esteem" or agency or confiden* or "reason* for living" or "life evaluation" or "life satisfaction" or "attachment behav*" or "emotional control" or "faith" or "family relations" or friendship or hope or hopelessness or optimism or "parent child relations" or religion or "religious beliefs" or "self efficacy" or "significant others" or "social interaction" or "social networks" or "social perception" or "social support" or "spirituality" or "support groups").mp. [mp=ti, ab, sh, hw, tn, ot, dm, mf, dv, kw, nm, kf, px, rx, an, ui, tc, id, tm]	8449481
4	PsycINFO, EMBASE, MEDLINE	Combined 1 and 2 and 3 to get an overall selection of any articles in the databases referring to any of these terms in any sections	3803
5	PsycINFO, EMBASE, MEDLINE	("first episode psychosis" or psychosis or psychoses or psychotic or schizophreni* or "schizotypal disorder*" or "delusional disorder*" or "schizoaffective disorder*" or "early psychosis" or "recent onset schizophrenia" or "recent onset psychosis" or "first episode schizophrenia" or "early schizophrenia").m_titl.	191345
6	PsycINFO, EMBASE, MEDLINE	(suicid* or parasuicid*).m_titl.	62495
7	PsycINFO, EMBASE, MEDLINE	(protect* or buffer* or moderat* or mediat* or modulat* or resilien* or recover* or prevent* or attenuat* or interact* or "social problem solv*" or "problem solv*or coping" or cope* or "memory bias*" or "cognitive bias" or "cognitive	1729189

		processes" or ruminat* or belong* or burden* or "future thought*" or "social support" or attitude* or capability or capable or impuls* or implementation or intention* or "access to mean*" or imitation or "social learn*" or "attribution*" or adaptability or personality or "emotional intelligen*" or "cognitive process bias*" or "self esteem" or agency or confiden* or "reason* for living" or "life evaluation" or "life satisfaction" or "attachment behav*" or "emotional control" or "faith" or "family relations" or friendship or hope or hopelessness or optimism or "parent child relations" or religion or "religious beliefs" or "self efficacy" or "significant others" or "social interaction" or "social networks" or "social perception" or "social support" or "spirituality" or "support groups").m_titl.	
8	PsycINFO, EMBASE, MEDLINE	(4 and 5 and 6) OR (4 and 5 and 7) OR (4 and 6 and 7)	734
9	PsycINFO, EMBASE, MEDLINE	Remove duplicates from 8	556
10	PsycINFO, EMBASE, MEDLINE	Limit 8 to journal article [Limit not valid in Embase, records were retained]	486
11	PsycINFO, EMBASE, MEDLINE	Limit 8 to English language	411
12	PsycINFO, EMBASE, MEDLINE	Limit 8 to human	374
13	PsycINFO, EMBASE, MEDLINE	Limit 8 to article [Limit not valid in Ovid Medline, PsycINFO; records were retained]	229
14	PsycINFO, EMBASE, MEDLINE	Excluded articles that do not meet the inclusion criteria	185
15	Web of Science	TOPIC = ("first episode psychosis" or psychosis or psychoses or psychotic or schizophreni* or "schizotypal disorder*" or "delusional disorder*" or "schizoaffective disorder*" or "early psychosis" or "recent onset schizophrenia" or "recent onset psychosis" or "first episode schizophrenia" or "early schizophrenia")	172, 668
16	Web of Science	TOPIC = (suicid* or parasuicid*)	61, 156
17	Web of Science	TOPIC = (protect* or buffer* or moderat* or mediat* or modulat* or resilien* or recover* or prevent* or attenuat* or interact* or "social problem solv*" or "problem solv*or coping" or cope* or "memory bias*" or "cognitive bias" or "cognitive processes" or ruminat* or belong* or burden* or	8,163,843

		"future thought*" or "social support" or attitude* or capability or capable or impuls* or implementation or intention* or "access to mean*" or imitation or "social learn*" or "attribution*" or adaptability or personality or "emotional intelligen*" or "cognitive process bias*" or "self esteem" or agency or confiden* or "reason* for living" or "life evaluation" or "life satisfaction" or "attachment behav*" or "emotional control" or "faith" or "family relations" or friendship or hope or hopelessness or optimism or "parent child relations" or religion or "religious beliefs" or "self efficacy" or "significant others" or "social interaction" or "social networks" or "social perception" or "social support" or "spirituality" or "support groups")	
18	Web of Science	Combined 15 and 16 and 17 to get an overall selection of any articles in the databases referring to any of these terms in any sections	2,057
19	Web of Science	TITLE = ("first episode psychosis" or psychosis or psychoses or psychotic or schizophreni* or "schizotypal disorder*" or "delusional disorder*" or "schizoaffective disorder*" or "early psychosis" or "recent onset schizophrenia" or "recent onset psychosis" or "first episode schizophrenia" or "early schizophrenia")	114,104
20	Web of Science	TITLE = (suicid* or parasuicid*)	35,064
21	Web of Science	TITLE = (protect* or buffer* or moderat* or mediat* or modulat* or resilien* or recover* or prevent* or attenuat* or interact* or "social problem solv*" or "problem solv*or coping" or cope* or "memory bias*" or "cognitive bias" or "cognitive processes" or ruminat* or belong* or burden* or "future thought*" or "social support" or attitude* or capability or capable or impuls* or implementation or intention* or "access to mean*" or imitation or "social learn*" or "attribution*" or adaptability or personality or "emotional intelligen*" or "cognitive process bias*" or "self esteem" or agency or confiden* or "reason* for living" or "life evaluation" or "life satisfaction" or "attachment behav*" or "emotional control" or "faith" or "family relations" or friendship or hope or hopelessness or optimism or "parent child relations" or religion or "religious beliefs" or "self efficacy" or "significant others" or "social interaction" or "social networks" or "social perception" or "social support" or "spirituality" or "support groups")	2,260,800
22	Web of Science	(18 and 19 and 20) OR (18 and 19 and 21) OR (18 and 20 and 21)	404
23	Web of Science	22 [Limit to: English Language and Articles only]	305
24	Web of Science	Web of Science Results combined with Ovid results (14 AND 24)	490

25	Manual Search	Further duplicates of between databases = 154	336
26	Manual Search	Further excluded articles that did not meet the inclusion criteria = 310	26 Unique results

APPENDIX 2:

List of Reviewed Articles

Appendix 2: List of Reviewed Articles

Acosta, F.J., Aguilar, E.J., Cejas, M.R., & Gracia, R. (2013). Beliefs about illness and their relationship with hopelessness, depression, insight and suicide attempts in schizophrenia. *Psychiatria Danubina, 25(1),* 49-54.

Barrett, E.A., Sundet, K., Faerden, A., Agartz, I., Bratlien, U., Romm, K.L., Mork E., Rossberg, J.I., Steen, N.E., Andreassen, O.A., & Melle I. (2010). Suicidality in first episode psychosis is associated with insight and negative beliefs about psychosis. *Schizophrenia Research, 123(2-3),* 257-262.

Bourgeois, M., Swendsen, K., Young, F., Amador, X, Pini, C., Cassano, G.B., Lindenmayer, J.P., Hsu, C., Alphs, L., & Meltzer, H.Y. (2004). Awareness of disorder and suicide risk in the treatment of schizophrenia: Results of the International Suicide Prevention Trial. *American Journal of Psychiatry, 161,* 1494-1496.

Breier, A., & Astrachan, B. M. (1984). Characterization of schizophrenic patients who commit suicide. *American Journal of Psychiatry, 141,* 206 -209.

De Hert, M., McKenzie, K., & Peuskens, J. (2001). Risk factors for suicide in young people suffering from schizophrenia: A long-term follow-up study. *Schizophrenia Research, 47(2-3),* 127-134.

Fenton, W.S., McGlasghan, T.H., Victor, B., & Blyler, C.R. (1997). Symptoms, subtype and suicidality in patients with schizophrenia spectrum disorders. *American Journal of Psychiatry, 154,* 199–204.

Gooding, P. A, Sheehy, K., & Tarrier, N. (2013). Perceived stops to suicidal thoughts, plans, and actions in persons experiencing psychosis. *Crisis: The Journal of Crisis Intervention and Suicide Prevention, 34(4),* 273-281.

Hawton, K., Sutton, L., Haw, C., Sinclair, J., & Deeks, J.J. (2005) Schizophrenia and suicide: Systematic review of risk factors. *British Journal of Psychiatry, 187*, 9-20.

Hu, W.H., Sun, C.M., Lee, C.T., Peng, S.L., Lin, S.K., & Shen, W.W. (1991). A clinical study of schizophrenic suicides 42 cases in Taiwan. *Schizophrenia Research, 5*, 43-50.

Huguelet, P. Mohr, S., Jung, V., Gillieron, C., Brandt, P.Y., & Borras, L. (2007). Effect of religion on suicide attempts in outpatients with schizophrenia or schizo-affective disorders compared with inpatients with non-psychotic disorders. *European Psychiatry, 22(3),* 188-194.

Jarbin H., & von Knorring A.L.(2004). Suicide and suicide attempts in adolescent-onset psychotic disorders. *Nordic Journal of Psychiatry, 58(2),* 115-123.

Johnson, J., Gooding, P.A., Wood, A.M., Taylor, P.J., Pratt, D., & Tarrier, N. (2010). Resilience to suicidal ideation in psychosis: Positive self-appraisals buffer the impact of hopelessness. *Behaviour Research & Therapy, 48(9),* 883-9.

Melle I., & Barrett E.(2012). Insight and suicidal behaviour in first-episode schizophrenia, *Expert Review of Neurotherapeutics, 12(3)* ,353-359.

Mohr, S., Brandt, P.Y., Borras, L., Gillieron, C., & Huguelet, P. (2006). Toward an integration of spirituality and religiousness into the psychosocial dimension of schizophrenia. *The American Journal of Psychiatry, 163(11),* 1952-1959.

Montross, L.P., Ziskook, S., & Kasckow, J. (2005). Suicide Among Patients with Schizophrenia: A consideration of risk and protective factors. *Annals of Clinical Psychiatry, 17(3),* 173-182.

Nordentoft, M., Jeppesen, P., Abel, M., Kasow, P. Petersen, L. Thorup, A., Krarup, G., Hemmingsen, R., & Jorgensen, P. (2002). OPUS study: suicidal behaviour; suicidal ideation and hopelessness among patients with first-episode psychosis. One year

follow-up of a randomized controlled trial. *British Journal of Psychiatry, 181 (43),* 98 - 106.

Oquendo, M.A., Dragatsi, D., Harkavy-Friedman, J., Dervic, K., Currier, D, Burke, A.K., Grunebaum, M.F., & Mann, J.J. (2005). Protective Factors Against Suicidal Behaviour in Latinos. *Journal of Nervous and Mental Disease, 193(7),* 438-443.

Restifo, K., Harkavy-Friedman, J., Shrout, M., & Patrick, E. (2009). Suicidal behaviour in schizophrenia: A test of the Demoralization Hypothesis. *Journal of Nervous and Mental Disease, 197(3),* 147-153.

Rosmarin, D.H., Bigda-Peyton, J.S., Ongur, D., Pargament, K.I., & Bjorgvinsson, T. (2013). Religious coping among psychotic patients: Relevance to suicidality and treatment outcomes. *Psychiatry Research, 210,* 182-187.

Schwartz-Stav, O., Apter, A., & Zalsman, G. (2006). Depression, suicidal behaviour and insight in adolescents with schizophrenia. *European Child & Adolescent Psychiatry, 15(6),* 352-359.

Sharaf, A.Y., Ossman, L.H., & Lachine, O.A. (2012). A cross-sectional study of the relationships between illness insight, internalized stigma, and suicide risk in individuals with schizophrenia. *International Journal of Nursing Studies, 49,* 1512-1520.

Skodlar, B., Tomori, M., & Parnas, J. (2008). Subjective experience and suicidal ideation in schizophrenia. *Comprehensive Psychiatry, 49(5),* 482-488.

Steblaj, A., Tavcar, R., & Dernovsek, M.Z. (1999). Predictors of suicide in psychiatric hospital. *Acta Psychiatrica Scandinavica, 100,* 383-388.

Tarrier, N., Gooding, P., Gregg, L., Johnson, J., & Drake, R. (2007). Suicide schema in schizophrenia: the effect of emotional reactivity, negative symptoms and schema elaboration. *Behaviour Research and Therapy, 45*, 2090–2097.

Warman, D.M., Forman, E.M., Henriques, G.R., Brown, G.K. & Beck, A.T. (2004). Suicidality and psychosis: beyond depression and hopelessness. *Suicide & Life-Threatening Behaviour, 34(1),* 77-86.

Webb, R.T., Langstrom, N., Runeson, B., Lichtenstein, P. & Fazel, S. (2011). Violent offending and IQ level as predictors of suicide in schizophrenia: national cohort study. *Schizophrenia Research, 130(1-3),* 143-7.

APPENDIX 3:

Quality review of quantitative studies

Appendix 3 Quality review of quantitative studies

Quality Criteria for Quantitative Studies	Articles																	
	Acosta et al 2013	Barrett et al 2010	Bourgeoi et al 2004	Breier et al. 1984	De Hert et al 2001	Fenton et al. 1997	Hu et al. 1991	Jarbin et al 2004	Johnson et al 2010	Nordentoft et al 2002	Oquendo et al 2005	Restifo et al 2009	Rosmarin et al 2013	Schwartz et al 2006	Sharaf et al 2012	Steblaj et al 1999	Tarrier et al. 2007	Warman et al 2004	Webb et al 2011
Rationale clearly described?	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++
Research aims clearly stated?	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++
Ethical issues addressed?	++	++	++	++	--	++	++	--	++	++	+/-	+/-	++	++	++	--	++	++	--
Is the methodology appropriate to the research question?	++	++	++	++	++	++	+/-	+/-	++	++	++	++	++	++	++	++	++	++	++
Study design identifie	++	++	++	++	++	++	+/-	+/-	++	++	++	++	++	++	++	+/-	++	++	++

Quality Criteria for Quantitative Studies	Articles																		
	Acosta et al 2013	Barrett et al 2010	Bourgeoi et al 2004	Breier et al. 1984	De Hert et al 2001	Fenton et al. 1997	Hu et al. 1991	Jarbin et al 2004	Johnson et al 2010	Nordentoft et al 2002	Oquendo et al 2005	Restifo et al 2009	Rosmarin et al 2013	Schwartz et al 2006	Sharaf et al 2012	Steblaj et al 1999	Tarrier et al. 2007	Warman et al 2004	Webb et al 2011
d and the rationale for choice evident?																			
Hypotheses stated?	++	++	++	++	--	++	++	--	++	++	++	++	++	++	++	--	++	++	++
Key study variables identified?	++	++	++	++	+/-	++	++	++	++	++	++	++	++	++	++	+/-	++	++	++
Sample population situated?	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++
Selection of participants adequately described?	++	++	++	++	++	++	++	++	++	++	++	++	++	+/-	++	++	++	++	++

Quality Criteria for Quantitative Studies	Articles																	
	Acosta et al 2013	Barrett et al 2010	Bourgeoi et al 2004	Breier et al. 1984	De Hert et al 2001	Fenton et al. 1997	Hu et al. 1991	Jarbin et al 2004	Johnson et al 2010	Nordentoft et al 2002	Oquendo et al 2005	Restifo et al 2009	Rosmarin et al 2013	Schwartz et al 2006	Sharaf et al 2012	Steblaj et al 1999	Tarrier et al. 2007	Warman et al 2004	Webb et al 2011
Method of data collection is reliable and valid?	+/-	+/-	++	++	+/-	+/-	+/-	+/-	++	++	+/-	++	++	++	++	+/-	++	++	+/-
Method of data analysis is reliable and valid?	++	++	++	+/-	++	++	++	++	++	++	++	++	++	++	++	++	++	+/-	++
Findings clearly stated?	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++
Comprehensive discussion?	++	++	+/-	+/-	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++
Strengths and limitations	++	++	--	+/-	+/-	+/-	++	+/-	++	++	+/-	++	++	+/-	++	+/-	++	++	++

Quality Criteria for Quantitative Studies	Articles																		
	Acosta et al 2013	**Barrett et al 2010**	**Bourgeoi et al 2004**	**Breier et al. 1984**	**De Hert et al 2001**	**Fenton et al. 1997**	**Hu et al. 1991**	**Jarbin et al 2004**	**Johnson et al 2010**	**Nordentoft et al 2002**	**Oquendo et al 2005**	**Restifo et al 2009**	**Rosmarin et al 2013**	**Schwartz et al 2006**	**Sharaf et al 2012**	**Steblaj et al 1999**	**Tarrier et al. 2007**	**Warman et al 2004**	**Webb et al 2011**
identified?																			
Justifiable conclusions made?	++	++	++	++	++	++	+/-	++	++	++	++	++	++	++	++	++	++	++	++

Key: ++ All or most of the criteria have been fulfilled. Criteria that have not been fulfilled are thought **very unlikely** to impact on the quality or overall conclusions of the study. +/- Some of the criteria have been fulfilled. Criteria that have not been fulfilled or not adequately described are thought **unlikely** to impact on the quality or overall conclusions of the study. -- Few or no criteria fulfilled. The unfulfilled criteria are thought **likely** to have an impact on the quality or overall conclusions of the study.

APPENDIX 4:

Quality review of Qualitative studies

Appendix 4 Quality review of Qualitative studies

Quality Criteria for Qualitative Studies	Articles			
	Gooding et al 2013	Huguelet e al 2007	Mohr et al 2006	Skodlar et al 2008
Rationale clearly described?	++	++	++	++
Research aims stated?	++	++	++	++
Ethical issues addressed?	+/-	++	+/-	++
Methodology appropriate to the research question?	++	+/-	+/-	++
Philosophical background identified?	--	--	--	--
Study design identified and the rationale for choice evident?	++	++	++	++
Major concepts identified?	++	++	++	--
Sample population situated?	++	++	++	++
Selection of participants adequately described?	+/-	++	++	++
Method of data collection auditable?	+/-	++	++	++
Method of data analysis credible and confirmable?	+/-	+/-	++	++
Reflectivity considered and described?	+/-	++	++	--
Findings clearly stated?	++	++	++	++
Comprehensive discussion?	++	++	++	++
Strengths and limitations identified?	+/-	++	++	+/-
Justifiable conclusions made?	++	++	++	++

Key: ++ All or most of the criteria have been fulfilled. Criteria that have not been fulfilled are thought **very unlikely** to impact on the quality or overall conclusions of the study. +/- Some of the criteria have been fulfilled. Criteria that have not been fulfilled or not adequately described are thought **unlikely** to impact on the quality or overall conclusions of the study. -- Few or no criteria fulfilled. The unfulfilled criteria are thought **likely** to have an impact on the quality or overall conclusions of the study.

APPENDIX 5:

Sample Size

Appendix 5: Sample Size

Size of effect	**f**	**% of variance**	**Power (alpha = 0.05; N=45)**
Cohen's Effect Sizes			
Small	0.1	1	0.083
Medium	0.25	6	0.285
large	0.4	14	0.635
Effect Size for 0.8 power	0.48	17	0.800

APPENDIX 6:

Participant Screener Checklist

Appendix 6: Participant Screener Checklist

Recruitment Criteria:

Inclusion Criteria

Please tick (✔) ONE box only for each criterion below as appropriate (i.e. Yes OR No):

Inclusion Criteria	Yes	No
Give written informed consent	☐	☐
Aged 16-35 years	☐	☐
English language	☐	☐
Have a case-note diagnosis of first episode of psychosis (FEP)	☐	☐
Has been in the care of EIS for a minimum of 6 months	☐	☐
Has made a suicide attempt in the last two years that has led to medical intervention OR has suicidal ideation and not previously deliberately self-harmed OR has no suicidal ideation and not previously deliberately self-harmed.	☐	☐
No current risk of self-harm or harm to others (unless otherwise specified in the research interview)	☐	☐
Does not have florid symptoms of psychosis	☐	☐
Permission for recruitment and participation is granted from the participants Resident Medical Officer (RMO)	☐	☐
Do not have moderate or severe learning difficulties	☐	☐

Exclusion Criteria

Please tick (✔) ONE box only for each criterion below as appropriate (i.e. Yes OR No):

Exclusion Criteria	Yes	No
Do not consent to taking part in the study	☐	☐
Inability to understand English since the questionnaires used in this study have not yet been validated in other countries	☐	☐
Have moderate or severe learning difficulties	☐	☐
Has been within EIS for less than six months as the first six months would be crucial in maintaining stability of any presenting symptoms at intake for the service to monitor the patients	☐	☐
Any participants experiencing florid symptoms of psychosis will be excluded as it would be deemed unethical to conduct research or expect participation in the	☐	☐

Exclusion Criteria	Yes	No
research when the person is unwell.		
Individuals with current risk of self-harm or risk of suicide or harm to others will be excluded from the study. Prior to the researcher approaching the individual to participate in the study and gaining informed consent process, current risk of self-harm or risk of suicide or harm to others will be assessed by the clinicians responsible for the individual participant's care and treatment at the EIS.	☐	☐

If ALL *inclusion* criteria are ticked 'Yes' and ALL *exclusion* criteria are ticked 'No', participant is included.

If at least ONE answer in the *inclusion* criteria is ticked 'No' and/or at least ONE answer in the *exclusion* criteria is ticked 'Yes', participant is not included in the study.

APPENDIX 7:

Letter from the clinician introducing the research

Appendix 7: Letter from the clinician introducing the research

[Insert EIS address and clinician details]

Dear [name of potential participant]

I am writing to tell you about a study being conducted at Birmingham University by Rebecca Heelis, which may help to understand and find better ways to treat mental health difficulties.

My colleague, Rebecca Heelis, is investigating why some people with psychosis are more likely to attempt suicide than others. You may be eligible for this study as she is interested in hearing from people (16-35 years old) who have experiences of psychosis, such as hearing voices. Rebecca is interested in those who have previously attempted suicide as well as those who have not. This is because she is interested in whether similar factors are as important to people with and without these experiences.

I am not a member of her research team, however, I am contacting some of my service users to let them know about the research in case they might be interested in learning more.

It is important to know that this letter is not to tell you to join this study. It is your decision. Your participation is voluntary. Whether or not you participate in this study will have no effect on your relationship with the Early Intervention Service as a patient.

If you are interested in learning more about this study, please review the enclosed information from Rebecca Heelis and let me know if you would like your contact details to be passed on to her, so that she gets in contact with you.

You do not have to respond if you are not interested in this study.

Thank you for your consideration.

Yours sincerely

[insert clinician's name from EIS]

Enclosed: Participant Information Sheet

APPENDIX 8:

Research Participant Information Sheet (PIS)

Appendix 8: Research Participant Information Sheet (PIS)

Study Title: <u>Investigating the moderators between suicidal desire and behaviour in young people with a first episode of a psychosis</u>

Researcher: Rebecca Heelis, Trainee Clinical Psychologist, University of Birmingham

Email:

You are being invited to participate in a research study. This study will be conducted by Rebecca Heelis (Trainee Clinical Psychologist) from the University of Birmingham who is being supervised by Dr. Chris Jackson and Dr. Hermine Graham. Before you decide whether or not to take part, it is important for you to understand why this research study is being done and what it will involve. Please take time to read the following information carefully. Talk to others about this if you wish.

1. What is the study about?

The purpose of this study is to find out why some people are more likely to attempt suicide than others. Certain factors related to the way people think may be particularly important in understanding why some people attempt suicide. These factors include:

- Burden: Thinking they may be a burden on others
- Belonging: How connected they feel with other people
- Experience with painful and distressing events

The aim of this research is to explore these factors in more detail. This study will be used to better support these people and develop effective interventions for suicide.

2. Why have I been chosen?

You have been chosen as we are interested in hearing from people (16-35 years old) who have experiences of psychosis, such as hearing voices. We are interested in those who have previously attempted suicide as well as those without such experiences. This is because we're interested in whether similar factors are as important to people with and without these experiences.

3. Do I have to take part?

No, taking part is voluntary. It is up to you to decide whether or not to take part. If you do decide to take part, you will be asked to sign a consent form. If you choose not to take part, you do not have to give a reason. You are free to withdraw at any time from this study at any point. Withdrawing from the study will not affect the care that you receive.

4. What will I be asked to do if I wanted to take part?

If you agree to take part in the project, you will be asked to sign a consent form. A standard letter will be sent to your GP only to inform them that you are involved in a research study and what the study entails (please see attached). The researcher will arrange with you a time and place suitable for you to complete a pack of questionnaires. The researcher will discuss with you if they would like to complete the questionnaires in private or with the researcher present.

The questionnaires ask about your feelings, thoughts, and mental health symptoms. These include questions about your past experiences of suicidal attempts, previous substance use, the extent to which you feel connected or a burden to others. Example questions are, "*Have you ever wished you were dead or wished you could go to sleep and not wake up?*" and "*These days I feel like a burden on the people in my life*". Please note, there are no wrong or right answers – we just want to hear about your opinions. You will have time before and after completing the questionnaires for you to ask any questions or concerns. The total time it takes to complete these questionnaires is between 60-90 minutes. Copies of the completed forms will be held in the offices of the University of Birmingham, but your name or details will not be on these documents.

There will be two short follow-up calls which will be made by the researcher (Rebecca Heelis) one day and one week after the study. This is not part of the study, but simply to ensure your well-being and to discuss any issues that have come about from the research.

5. Will I experience any risk or discomfort if I participate in the study?

The questionnaires involve highly sensitive questions and you may experience distress while answering these. If you do become upset, the researcher will stop the session straight away so that you may discuss any concerns. You are able to stop participation at any time you wish and are free to omit questions that they are not comfortable answering and will be informed of this before starting the study. At your request you will be able to have access to your EIS clinical psychologists and/or care coordinator to discuss any matters that arise from the research. You will also be provided with an information leaflet about support available to use if you feel you need it.

6. What are the potential benefits in taking part in this study?

The study provides an opportunity to be open and honest about their feelings about suicide. There are no direct benefits to the participant, however it may help future patients who are at risk of suicide. The findings from this study will help to advance scientific knowledge of suicidal behaviour in the area of psychosis and may help develop strategies for healthcare professionals who assess risk and help to prevent suicide with this client group. Furthermore, understanding the factors that increase risk may reduce future suicides as it will help to identify persons at risk more efficiently.

6. What if there is a problem or you have any questions about the study?

If you have any concerns about the way you have been dealt with or questions during this study please contact

7. What will happen if I don't want to carry on with the study?

You can withdraw from the study at any time, and you can request that the information you provided be destroyed immediately and we will do so immediately. If you do wish to withdraw at any time, you will not be under any pressure to change your mind and your decision will not affect your care in any way.

8. What will happen to the information I provide to you during the study?

If you decide to take part in this study, all the information you give us will be completely confidential and used for the purposes of this study only. However, should any of your responses indicate a cause for concern about the safety of yourself or others, your care coordinator will be informed and Trust policies will be followed. The researcher will also liaise with care co-ordinators to keep them informed irrespective of whether the participant is at risk or not and will record contact in your medical notes.

The data will be collected and stored in accordance with the Data Protection Act 1998 and will be disposed of in a secure manner. Your identity and contact details will be stored separately from the data gathered during the study. The researcher will destroy your personal details after the last follow up call is made. Completed questionnaires will be anonymised. Your name will not appear on any of the results. No individual responses will be reported. Only group findings will be reported. Completely anonymous copies of people's responses may be retained for up to 5 years after the study.

9. What will happen to the results of the study?

Prior to destroying the information collected from the interview the researchers will look at the results from the study. The information will be used to obtain an understanding of why some people attempt suicide. The information collected from everyone will be put together and included in a publication in a scientific journal. If this occurs the information will be analyzed as a whole and no person would be identifiable. This will help those who work with young people with psychosis to identify those persons at risk of suicide and how best to help them. If you wish to find out about the results please contact Rebecca Heelis [redacted] which will be provided via email or post.

10. Who is funding the research?

The research is being funded by the University of Birmingham and is sponsored by [West Midlands NHS Trust].

11. Will I receive any payment for participating in the study?

No, participation is voluntary. However, any travel expenses will be reimbursed.

THANK YOU VERY MUCH FOR YOUR HELP!

Sources of support

If you're feeling suicidal, in crisis or finding it difficult to cope, the following contact details may be of use.

GP or local Crisis Team

If calling during office hours call your Care Coordinator. If they are not there, you should call your GP or NHS Direct on 0845 46 47. If calling after 5pm Monday to Friday, at weekends or public holidays call, there will be an out of hours or emergency number on your GPs answer machine. Furthermore, you can text or email PALS Customer Care, details below. PALS is free and confidential, and can help if you need advice or have concerns about NHS services. Furthermore, they can also be contacted if you require further information regarding taking part in the research. Please note that PALS team is NOT a medical team.

Email:	Pals@bsmhft.nhsuk
Telephone:	0800 953 0045
Text:	07985 883 509
Website:	http://www.pals.nhs.uk/

PALS
Patient Advice
& Liaison Service
We're here to help

Birmingham Samaritans

Samaritans provide confidential emotional support to anyone experiencing feelings of distress or despair. They can be contacted by phone 24 hours a day.

Address:	13 Bow Street, Birmingham, B1 1DW
Email:	jo@samaritans.org
Telephone:	0121 666 6644 or 08457 90 90 90
Text:	07725 90 90 90
Website:	http://www.samaritans.org/

SAMARITANS
Need someone to talk to?

MIND in Birmingham

Provides confidential help on a range of mental health issues. Calls from anywhere in the UK are charged at local call.

Address:	17 Graham Street, Hockley, Birmingham, B1 3JR
Email:	contact@mind.org.uk
Telephone:	0845 766 0163 or 0121 608 8001
Website:	http://birminghammind.org/

mind
For better mental health

PAPYRUS: Prevention of young suicide

If you are a young person at risk of suicide or are worried about a young person at risk of suicide:

Address:	PAPYRUS Prevention of Young Suicide, 67 Bewsey Street WARRINGTON Cheshire WA2 7JQ
Email:	pat@papyrus-u.org
Telephone:	0800 068 41 41 (Mon-Fri 10am to 5pm and 7pm to 10pm Weekends: 2:00pm to 5:00pm)
Text:	07786 209697
Website:	http://www.papyrus-uk.org/

Turn2Me

An online mental health community providing peer and professional support. You can read articles, listen to podcasts, talk anonymously in our forums or join an online group support.

Address:	Turn2MeUK, 1 Pendlebury, Hamworth, Bracknell, Berkshire, England, RG12 7RB
Email:	info@turn2me.org
Website:	http://www.turn2me.org/

APPENDIX 9:

Research Participant Consent Form

Appendix 9: Research Participant Consent Form

Study Title: Investigating the moderators between suicidal desire and behaviour in young people with a first episode of a psychosis

Researcher: Rebecca Heelis, Trainee Clinical Psychologist, University of Birmingham

Email:

Please read the information sheet prior to completing this consent form.

Please read the statements below and if you agree please write your initials in the corresponding boxes. Thank you

	Please initial in the box
1. I am 16 - 35 years of age	
2. I confirm that I have read and understood the information sheet for the above study. I have had the opportunity to consider the information, ask questions, and have had these answered satisfactorily.	
3. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my medical care or legal rights being affected.	
4. I understand that my GP will be informed of my participation.	
5. I understand that data collected during the study will be reviewed by the University of Birmingham	
6. I understand that the information I give will be anonymised.	
7. I understand that all information/material collected during this study will be held in a secure manner at the University of Birmingham and kept for five years	

8. I understand that this research will be included as part of the researcher's Doctoral thesis and that an results may be published within a selected journal. ☐

9. I understand that relevant sections of my medical notes and data collected during the study may be looked at by individuals from Birmingham University, from regulatory authorities or from the NHS Trust, where it is relevant to my taking part in this research. I give permission for these individuals to have access to my records. ☐

I (participant name) _____ agree to take part in the named study.

Signed:_____Date:_____

Researcher:_____Date:_____

If you would like to receive information of the findings and any articles that are published from the research please tick the box ☐

APPENDIX 10:

Parental Consent Form for Person under 18 to Participate in Research Project

Appendix 10: Parental Consent Form for Person under 18 to Participate in Research Project

Study Title: Investigating the moderators between suicidal desire and behaviour in young people with a first episode of a psychosis

Researcher: Rebecca Heelis, Trainee Clinical Psychologist, University of Birmingham

Email: [redacted]

Persons under eighteen (18) years of age must have parental consent to participate in this research project.

Please read the information sheet prior to completing this consent form.

I hereby give permission for (participant name) _____ to take part in the named study being conducted at the University of Birmingham.

The nature and purpose of this research project have been provided in writing and completely explained to me. I understand the information and have had the opportunity to ask questions. I agree on behalf of the subject and myself to permit her/his participation in the research project on this basis.

I understand further that I or _____(subject) may withdraw at any time.

Signature of under 18_____
Date:_____

Signature of Parent/ Guardian:_____
Date:_____

Relationship to subject:_____

I have provided in writing and explained to _____ (subject) and _____ (parent or guardian) the nature and purpose of the research along with potential risks and benefits. I have asked if any questions have arisen regarding the research and have answered these questions to the best of my ability.

Signature of Researcher:_____ Date:_____

APPENDIX 11:

Letter to participant's GP

Appendix 11: Letter to participant's GP

Miss R Heelis
School of Psychology
University of Birmingham
Edgbaston
Birmingham
B15 2TT

Dr
GP Surgery
[*Insert address*]
[*Insert Date*]

Dear Dr. [*name of GP*]

Re: [*insert patient name & date of birth*]

I am a Trainee Clinical Psychologist currently studying at the University of Birmingham. I am currently researching suicidal desire and behaviour in young people with a first episode of psychosis.

The main aim of this research is to explore whether those who have attempted suicide have a greater sense of suicidal desire (thwarted belongingness and perceived burdensomeness) along with an acquired capability (i.e. becoming accustomed to physical pain and the fear of death /an individual's experiences with distress and painful events) for suicide compared to those who have not attempted suicide. This is based on Thomas Joiner's (2005) interpersonal-psychological theory of suicidal behaviour. This study will be used to better support these people and develop effective interventions for suicide.

Your patient, [*patient name*], agreed to take part in the study which involves completing a pack of questionnaires that will take one to two hours to complete. I will make two short follow up calls one day and one week later to ensure their well-being and to discuss any issues that have come about from the research.

I have attached a participant information leaflet which explains the study further (including the goals, the risks and the potential benefits). [*TBC: The research has received approval by the Ethics Review board*]. The research will form my thesis for the final part of my doctoral studies.

If you would like any further information about this project, please contact me using the details above.

Yours sincerely

Rebecca Heelis

Enc: Patient Information Sheet
CC: [*patient's name*]

APPENDIX 12:

Demographics and Background Information

Appendix 12: Demographics and Background Information

We would like to know a bit more about you so that we can compare the experiences of different types of people with psychosis.

1. I am: 01☐ Male 02☐ Female 03☐ I'd prefer not to say
2. Age: _____ years ☐ I'd prefer not to say
3. What is your ethnic origin?

White	**Asian/Asian British**	**Chinese and other ethnic background**
01☐ British 02☐ Irish 03☐ Any other white background	08☐ Indian 09☐ Pakistani 10☐ Bangladeshi 11☐ Any other Asian background	15☐ Chinese 16☐ Any other ethnic background (*please specify*)
Mixed	**Black/Black British**	
04☐ White and Black Caribbean 05☐ White and Black African 06☐ White and Asian 07☐ Any other mixed background	12☐ Caribbean 13☐ African 14☐ Any other Black background	17☐ I'd prefer not to say

4. How would you describe your work status?

☐1 Working full time (paid employment)

☐2 Working part time (paid employment)

☐3 Self-employed (paid employment)

☐4 Unemployed

☐5 Student

☐6 Unable to work

☐7 Other (please specify)_____

☐8 I prefer not to say

5. What is your highest level of education?

☐1 Less than secondary/high school

☐2 Some secondary/high school

☐3 Secondary/high school diploma or similar

☐4 Some college

☐5 Vocational school or certificate program

☐6 College or university degree (2- or 4- year)

☐7 Graduate degree

☐8 Other (please specify) _____

☐9 I'd prefer not to say

6. How would you describe your marital or relationship status? (Please check all that apply.)

☐1 Single

☐2 Have a significant other (e.g. cohabit or chosen romantic partner)

☐3 Married

☐4 Civil partnership

☐5 Separated

☐6 Divorced

☐7 Widowed

☐8 Other (please specify) _____

☐9 I'd prefer not to say

7. Which of the following best describes how you think of yourself?

☐1 Heterosexual (straight)

☐2 Gay/Lesbian

☐3 Bisexual

☐4 Other (please specify) _____

☐5 I'd prefer not to say

8. What is your religion?

☐1 No religion

☐2 Hindu

☐3 Sikh

☐4 Christian

☐5 Jewish

☐6 Buddhist

☐7 Muslim

☐8 Any other religion (please specify)_____

☐9 I'd prefer not to say_____

9. How long ago did you experience your first episode of psychosis? (If you don't remember, please give an estimate)

_____

10. Which of the following types of support, if any do you use when taking care of your mental health?

☐1 Friends/Family

☐2 Healthcare professionals

☐3 Activities

☐8 Any other support (please specify)_____

☐9 I'd prefer not to say

Thank you!

APPENDIX 13:

Section B of the Maudsley Addiction Profile

Appendix 13: Section B of the Maudsley Addiction Profile

APPENDIX 14:

Interpersonal Needs Questionnaire (INQ)

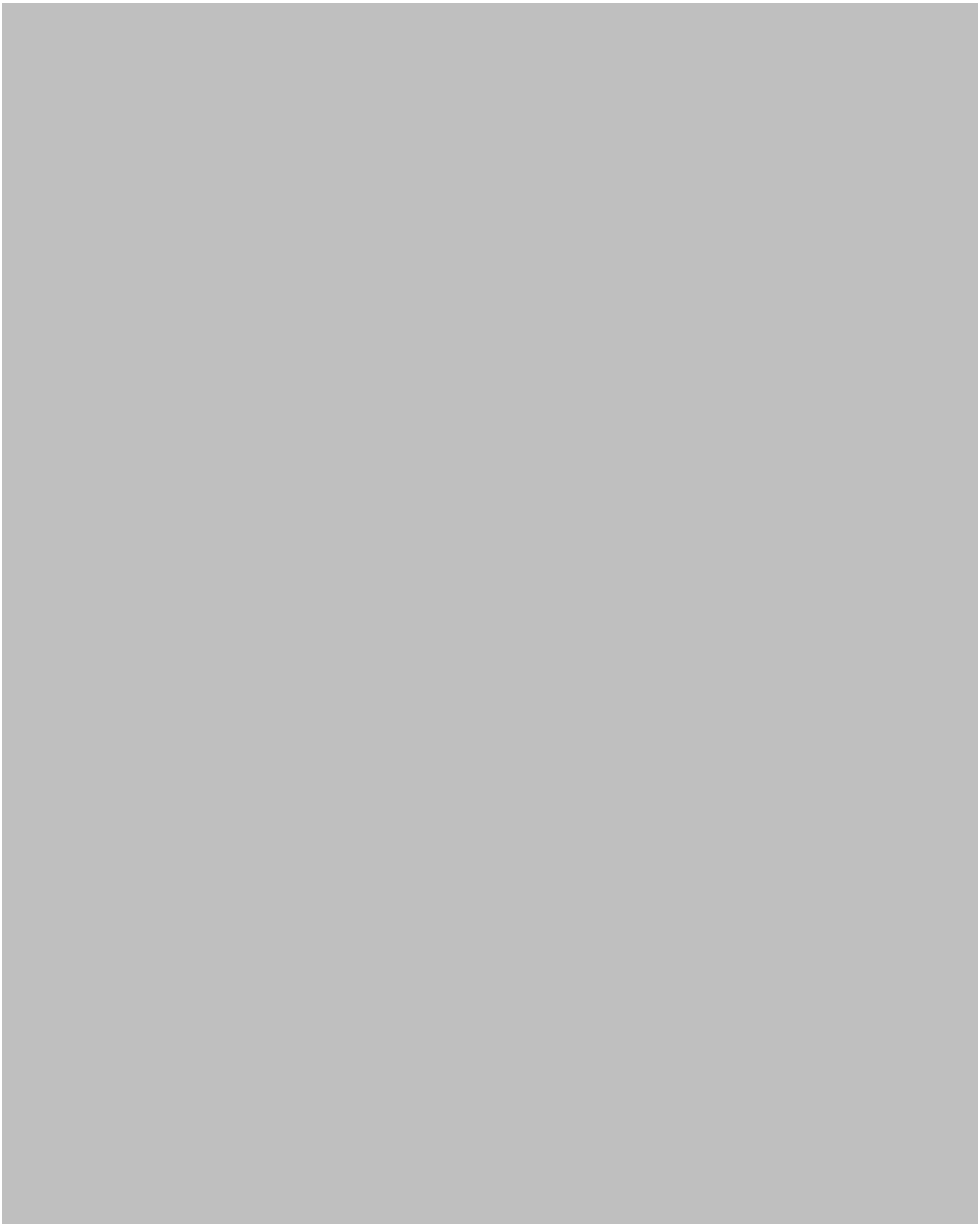
Appendix 14: Interpersonal Needs Questionnaire (INQ)

The following questions ask you to think about yourself and other people. Please respond to each question by using your own current beliefs and experiences, NOT what you think is true in general, or what might be true for other people. Please base your responses on how you've been feeling recently. Use the rating scale to find the number that best matches how you feel and write down that number in the space provided, next to that item. There are no right or wrong answers: we are interested in what you think and feel.

APPENDIX 15:

Basic Need Satisfaction Scale

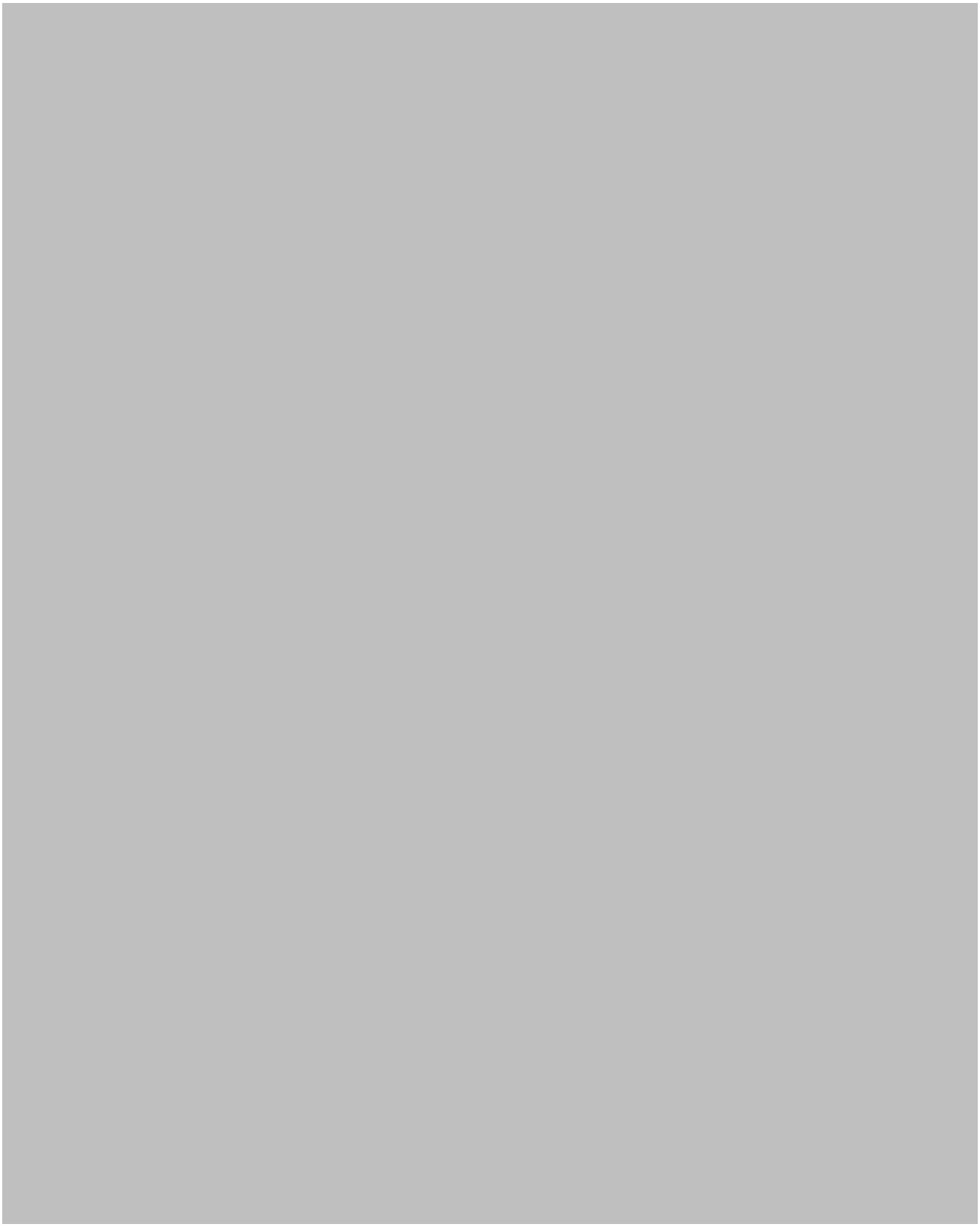
Appendix 15: Basic Need Satisfaction Scale



APPENDIX 16:

UCLA Loneliness Scale

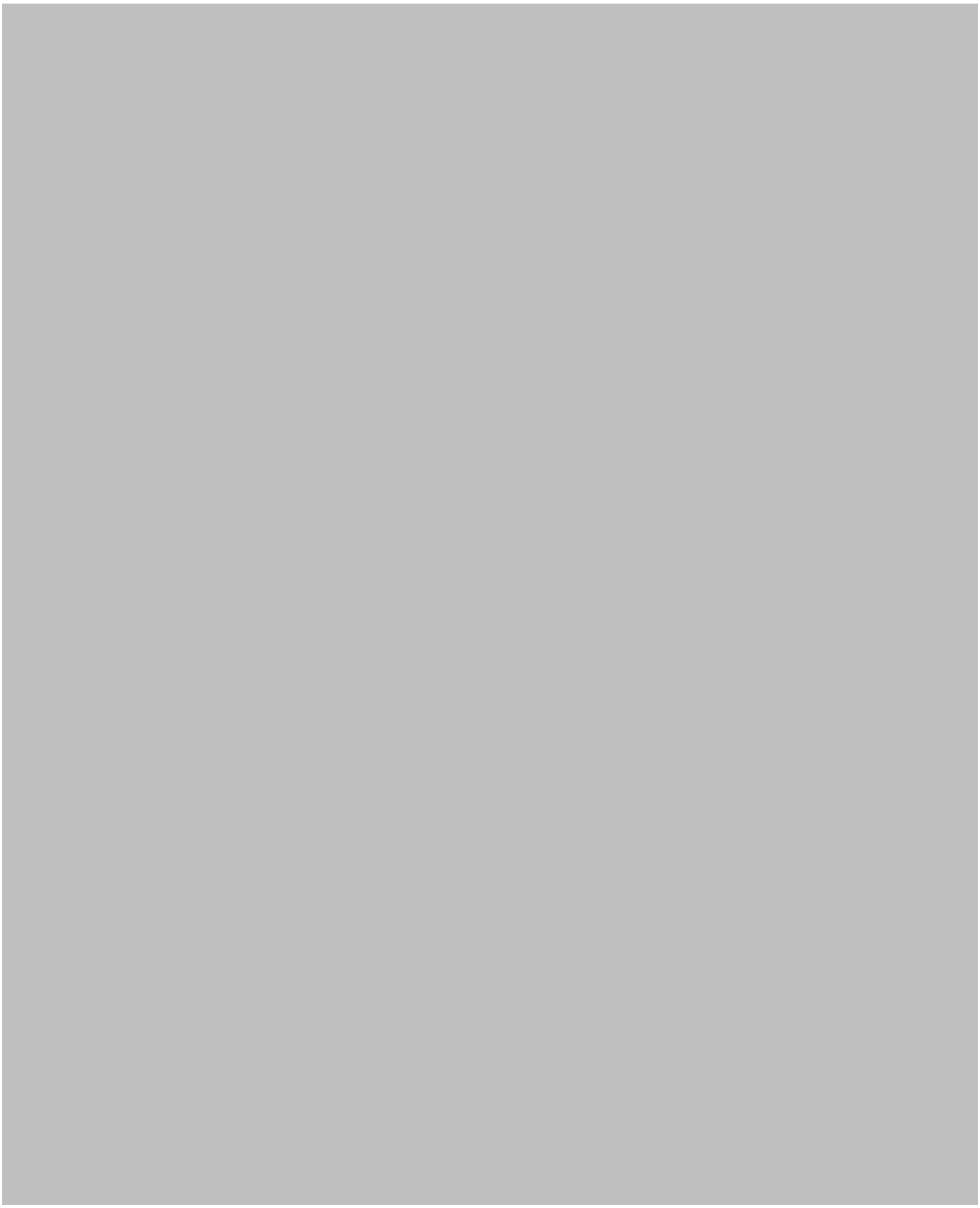
Appendix 16: UCLA Loneliness Scale



APPENDIX 17:

Reasons for Living: Responsibility to Family Scale

Appendix 17: Reasons for Living: Responsibility to Family Scale



APPENDIX 18:

Acquired Capability for Suicide Scale (ACSS)

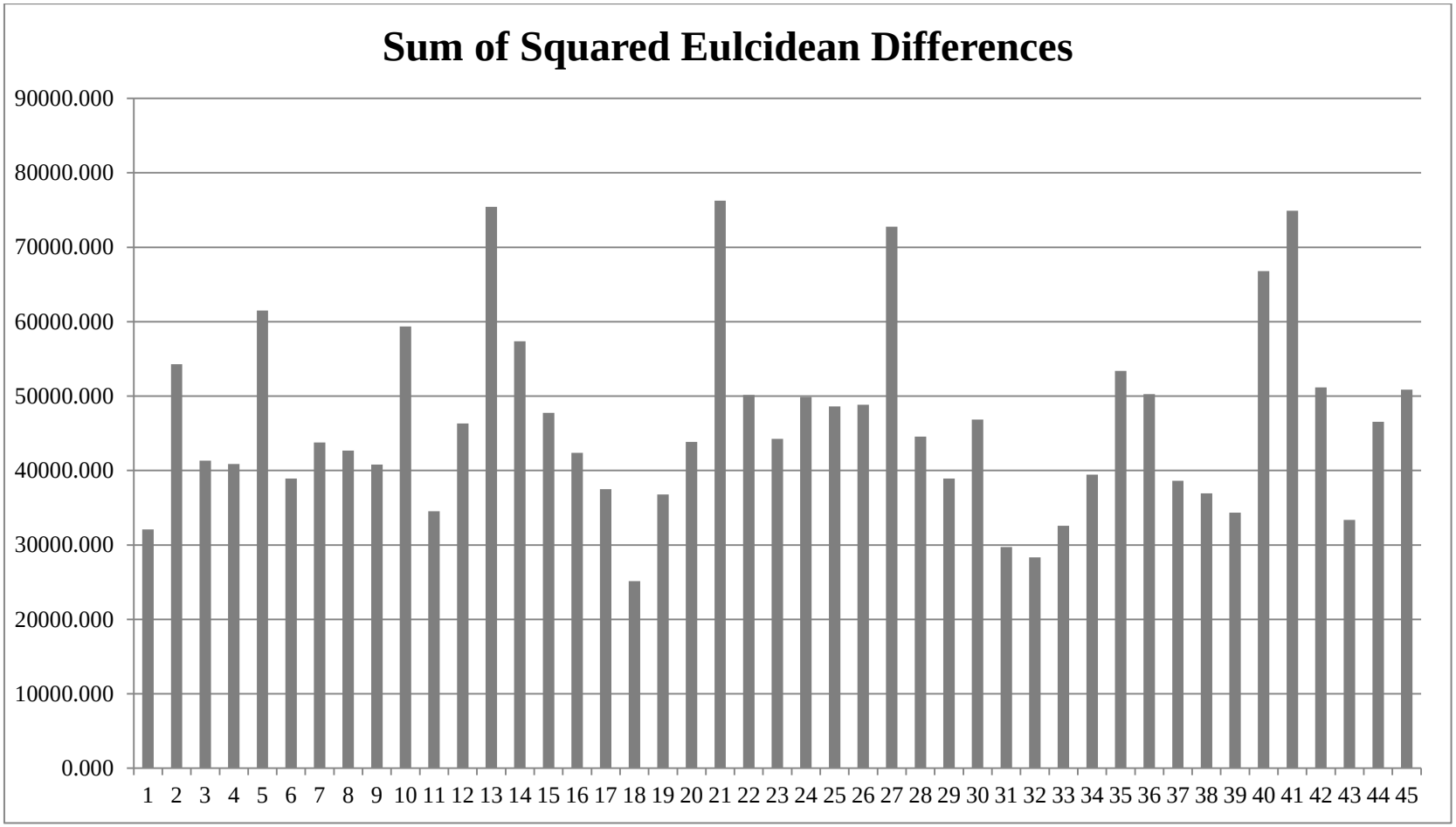
Appendix 18: Acquired Capability for Suicide Scale (ACSS)

Please read each item below and indicate to what extent you feel the statement describes you. Rate each statement using the scale below and indicate your responses on your answer sheet.

APPENDIX 19:

Sum of Squared Euclidean Differences

Appendix 19: Sum of Squared Euclidean Differences



APPENDIX 20:

Supplementary data: Comparisons with non-psychosis samples

Comparisons with non-psychosis samples

Scores on the INQ, PPES and ACSS were compared to a military sample (Bryan, et al. 2010), an undergraduate sample (Van Orden et al., 2008) and sample of people with depression (Smith et al., 2010) because currently there are no norm scores published for these measures (Marty et al 2012). The current FEP sample reported experiencing higher levels of burden (M= 3.88, SD= 0.525) compared to norms on the INQ from a military sample (Bryan et al 2010; M= 1.16, SD = 0.58) and undergraduate sample (Van Orden et al., 2008; Mean = 1.70, SD = 0.94). The FEP sample also reported higher levels of thwarted belongingness (M= 4.15 , SD =0.373) compared to the norms from a military sample (Bryan et al 2010; M= 2.28, SD = 1.21) and undergraduate sample (Van Orden et al., 2008; M= 2.18, SD = 1.15) (see Figure 6).

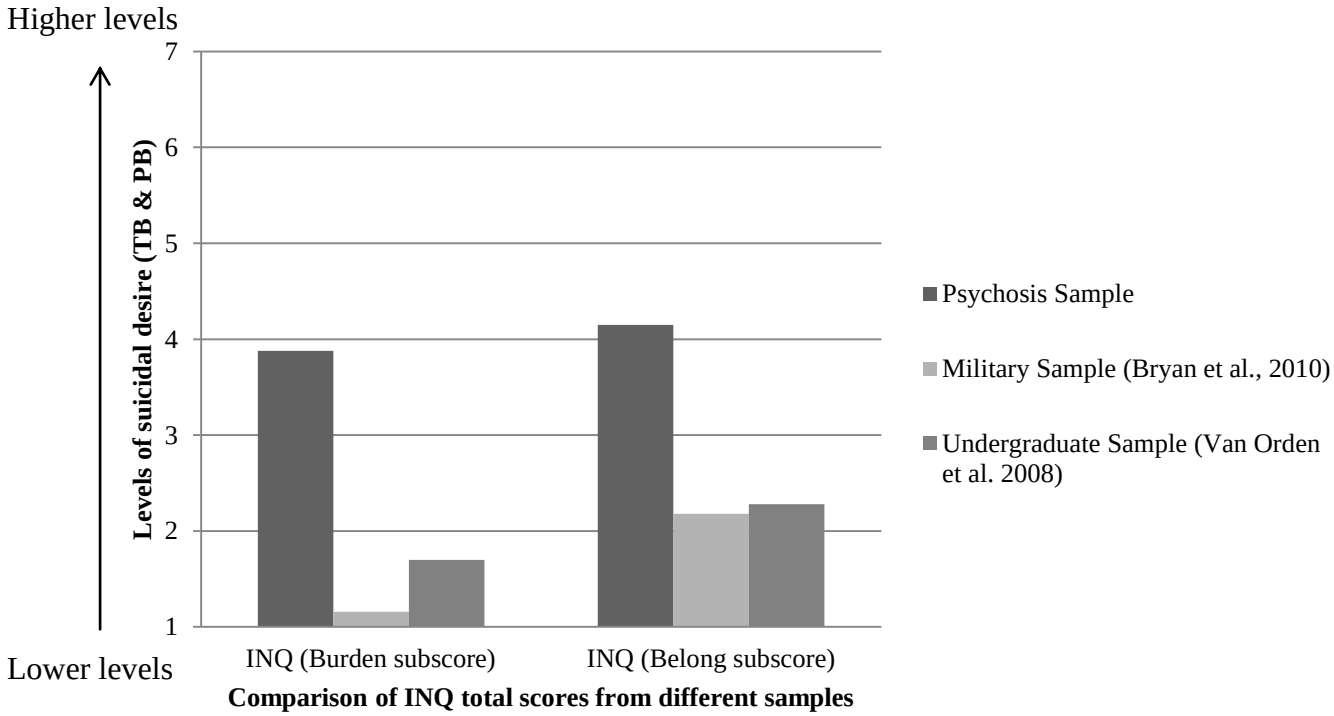


Figure 6: Young people with FEP INQ scores compared to other samples.

Compared to Smith et al.'s (2010) study, participants scored lower on the ACSS in all three groups. A similar pattern was also represented, for both studies, the lowest scores were reported by those in the ideation groups, followed by the control group and finally the attempters (see Figure 7). In the same study, PPES scores, as with the current study were highest for those who had previously attempted suicide. However, scores for the current study were higher in the ideator and control groups compared to that of Smith et al.'s (2010) study (see Figure 7).

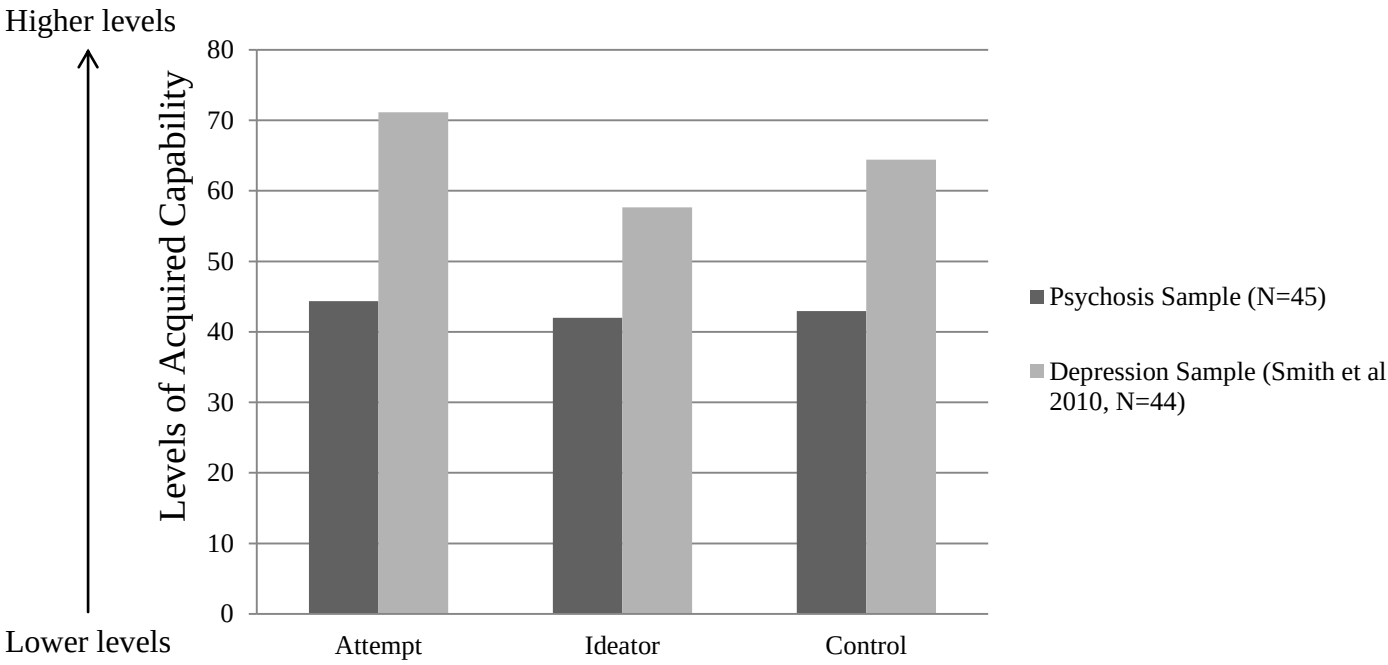


Figure 7: Mean ACSS Scores for people with depression compared to data from the current study

On the PPES (see Figure 8) both undergraduates with non-suicidal self-injury (Mean = 40.62, SD = 4.87) and undergraduates without (M= 38.51, SD = 7.13) reported lower levels painful and provocative events as compared to the total current FEP sample (M= 45.20, SD = 12.31) (Franklin, Hessel & Prinstein, 2011).

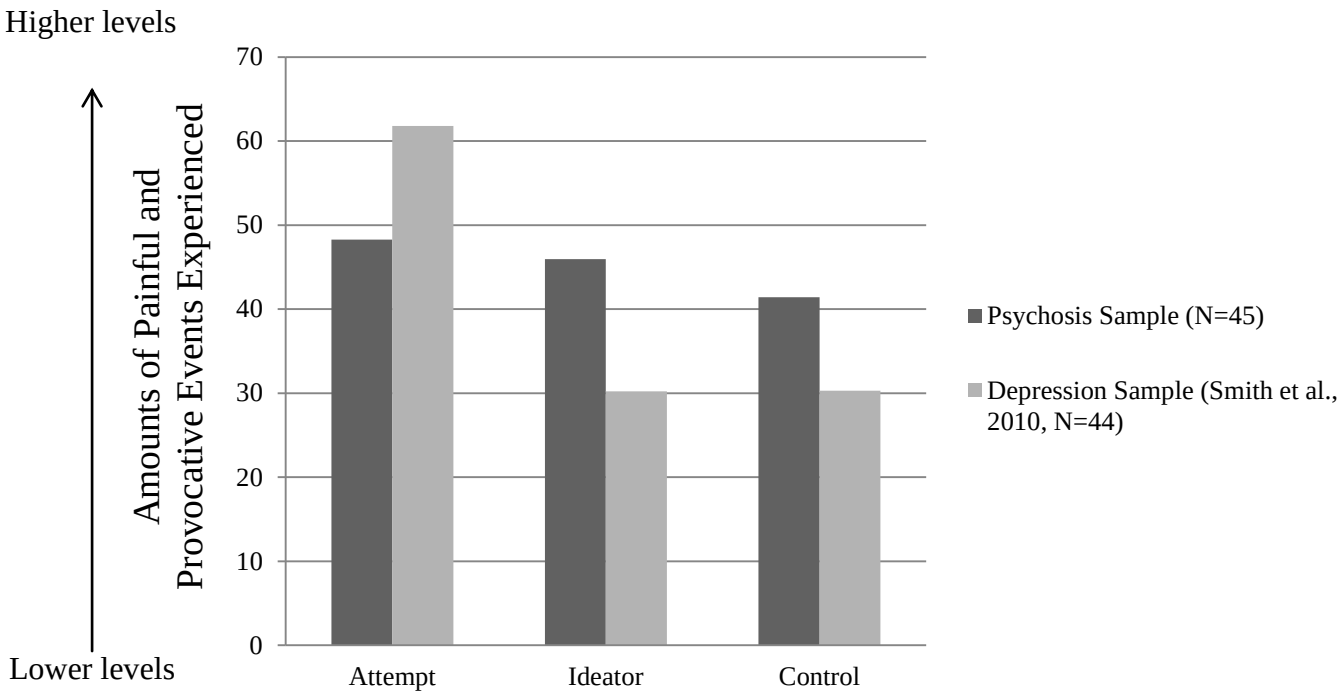


Figure 8: Mean PPES Scores for people with depression compared to data from the current study